

## ON THE GENUS MANDALOTUS (COLEOPTERA, CURCULIONIDAE)

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THE genus *Mandalotus* now consists of a greater number of species than any other of Australian weevils; and although thirty-eight new ones are now added, it is certain that many more remain to be taken. These beetles occur in abundance in the coastal and forest districts of Queensland, New South Wales, Victoria, and Tasmania, and extend rather sparsely into South Australia; several are herein added from Lord Howe and Norfolk Islands. A few were recorded from Western Australia, but these have all been transferred to *Timareta*. Many have been taken on mountains, including their summits, in tussocks, in moss, under leaves, and under logs and stones, and several occur at the roots of beach-growing plants. During floods they may often be obtained in abundance.

Mr. F. Erasmus Wilson has been recently keenly searching moss, tussocks, and fallen leaves, and has taken many new Victorian species, including several of great interest. Hardly any Australian weevil, for instance, has such remarkable legs as the male of *M. insignipes*. Mr. A. H. Elston has also taken some interesting species from South Australia.

Owing to the unattractive appearance of most of the species (often enhanced by dried mud), their sluggish habits, and the skill needed in obtaining them, they are usually passed over by collectors. At least two species, *M. urvaceus* and *M. crawfordi*, are destructive to growing grain, but being nocturnal they are rarely seen.

The characters of the under surface and legs are usually of greater specific import than those of the upper surface, and to see them clearly no abrasion is needed; but some manipulation is usually required to see the armature (when present) of the coxae and tibiae, and a small amount of dirt may easily obscure parts of the sterna and abdomen. On the other hand, to see certain details of the upper surface it is usually necessary to remove some of the scales. On almost all species of the genus there is a row of large punctures, following at a short distance the outline of the basal segment of abdomen; and another following the outline of the front of the metasternum, and usually easily traceable on the most densely clothed specimens. As they are so constant they have seldom been noted in the descriptions.

The females of but few species are distinct, and I have seldom associated

them with males, unless taken from the same localities; even many males are so strikingly alike, in general appearance, that they cannot be distinguished by the upper surface alone; there is, however, no other large genus of weevils in which the males may be so readily identified by the characters of the under surface and legs. In mounting single specimens it is therefore desirable that they should be placed on their sides, so that both surfaces may be examined.

In collections they are frequently associated with other genera which they strongly resemble, but from which they may be distinguished as follows:

*Essolithna*. Has a single claw to each foot.

*Polyphrades*. Has claws soldered together at base.

*Timareta*. Has no ocular lobes. Several species with ocular lobes were referred to *Dysostines* by Pascoe and Blackburn, and to *Mandalotus* by myself, but these have all been transferred to *Timareta*.

The New Zealand genus *Catoptes* is nearly allied, but the species have less rounded eyes; at present it includes some with ocular lobes and others without such. *Notiopatue sternalis* Brown, also from New Zealand, is very close to several species, but is without ocular lobes.

It is probable that future workers will break up the genus; but I am satisfied that the great variation in the separation of the front coxae is of specific value only, as the finest gradations occur between species in which the coxae touch and others in which they are widely separated. Pascoe and Blackburn both noted the variation in the distance separating the coxae as an unusual generic feature. The armature of the sternum and legs, and the processes on the abdomen, are all confined to the males. The species of the group (H of the table) with very thick scape, however, differ but little sexually, and that character might fairly be regarded as entitling them to generic rank.

References to the genus and species are as follows:

ERICHSON. *Wieg. Arch.*, 1812, p. 193.

*Mandalotus* named, referred to Otiorhynchides and four species described, *M. crudus* being the first.

LACORDAIRE. *Gen. Coleopt.*, vi., p. 231.

Genus referred with doubts to Eremnides.

PASCOE. *Journ. Linn. Soc. Zool.*, v., 1870, p. 472.

*Dysostines* named, referred to the Rhyparosomides, and one species described.

*Trans. Ent. Soc., Lond.*, 1870, p. 455.

Four species of *Dysostines* named.

*Ann. Mag. Nat. Hist.*, vii., 1873, p. 232.

One species of *Dysostines* named.

MASTERS. *Cat. Aust. Col.*

*Mandalotus* referred to Eremnides, 4487-4490.

*Dysostines* referred to Rhyparosomides, 4943-4948.

BLACKBURN. *Proc. Linn. Soc., N.S. Wales, 1890, p. 314.*

Notes on *Dysostines* with four species named.

*Id.*, 1892, p. 127.

Two species of *Dysostines* named.

*Trans. Roy. Soc. S. Austr., 1892, p. 229.*

*Dysostines* recorded as a synonym of *Mandalotus*.

*Id.*, 1901, p. 27.

Records examination of Erichson's types.

LEA. *Trans. Roy. Soc. S. Austr., 1904, p. 16.*

Twelve species of *Mandalotus* named.

*Id.*, 1907, p. 130.

Notes on genus, now referred to Leptopsides, and on several species, with table, and thirty-five species named.

*Id.*, 1909, p. 160.

Notes on genus and species, ten being named.

*Id.*, 1911, p. 67.

Notes on several species, and nine named.

*Id.*, 1912, p. 76.

Notes on several species, and five named.

*Id.*, 1914, p. 297.

Notes on genus and species, with second table, and eleven named.

*Id.*, 1916, p. 322.

Notes on several species and seven named.

*Id.*, 1923, p. 358.

One species named.

*Id.*, *Proc. Roy. Soc. Vic., xx (n.s.), pt. 2, 1907.*

One species named.

*Id.*, *Mem. Soc. Ent. Belge, xviii, 1910.*

One species named.

*Id.*, *Proc. Linn. Soc., N.S. Wales, 1914, p. 659.*

Three species named.

*Id.*, 1916, p. 735.

Two species named.

#### KEY TO SPECIES.

A. Middle of apex of basal segment of abdomen impinging  
on second.

a. Tip of impinging part shining and flat . . . . . *sterilis*

<i>aa.</i> Tip bituberculate.		
* Tubercles close together .. .. .		<i>squalidus</i>
** Tubercles rather widely separated .. .. .		<i>insularis</i>
AA. Middle of apex of basal segment incurved or almost straight.		
B. Prosternum tuberculate.		
<i>b.</i> Tubercle behind coxae .. .. .		<i>prosternalis</i>
<i>bb.</i> Tubercle in front of coxae		
<i>c.</i> Tubercle longitudinal .. .. .		<i>hoplosternus</i>
<i>cc.</i> Tubercle transverse .. .. .		<i>armipectus</i>
BB. Prosternum not tuberculate.		
C. Mesosternum with a projecting intercoxal process.		
<i>d.</i> Process bifid.		
<i>e.</i> Apex of process its widest part .. .. .		<i>laminipectus</i>
<i>ee.</i> Apex narrower than middle.		
<i>f.</i> Front tibiae terminating in a thin flange .. .. .		<i>laminatipes</i>
<i>ff.</i> Front tibiae terminating in a spur.		
<i>g.</i> Size less than 4 mm. .. .. .		<i>uniformis</i>
<i>gg.</i> Size more than 4 mm. .. .. .		<i>incisus</i>
<i>dd.</i> Process a truncated lamina.		
<i>h.</i> Process longer than middle coxae.		
<i>i.</i> Process narrower at apex than across middle .. .. .		<i>intercoxalis</i>
<i>ii.</i> Process of even width from apex to near base .. .. .		<i>hoplostethus</i>
<i>hh.</i> Process shorter than middle coxae.		
<i>j.</i> Elytra trisinnate at base .. .. .		<i>simulator</i>
<i>jj.</i> Elytra conjointly arcuate at base		
<i>k.</i> Front tibiae flattened and shining internally .. .. .		<i>carinatipes</i>
<i>kk.</i> Front tibiae not flat or shining there .. .. .		<i>niger</i>
<i>ddd.</i> Process conical in front.		
<i>l.</i> Prothoracic granules transversely arranged.		
<i>m.</i> Front tibiae with several distinct teeth on lower surface .. .. .		<i>pyrifer</i>
<i>mm.</i> Front tibiae without such .. .. .		<i>mesosternalis</i>
<i>ll.</i> Prothoracic granules not transversely arranged.		
<i>n.</i> Hind tibiae dentate at middle .. .. .		<i>erudus</i>
<i>nn.</i> Hind tibiae not so armed.		
<i>o.</i> Hind tibiae widest near and suddenly narrowed at base .. .. .		<i>rudis</i>
<i>oo.</i> Hind tibiae normal at base.		
<i>p.</i> Elytral setae fairly long and not in single series .. .. .		<i>variabilis</i>
<i>pp.</i> Elytral setae not as in <i>variabilis</i> .		
<i>q.</i> Mesosternal process not projecting beyond coxae .. .. .		<i>vacillans</i>
<i>qq.</i> Mesosternal process projecting beyond coxae.		
<i>r.</i> Prothoracic granules concealed before abrasion .. .. .		<i>auchmeresthes</i>

- rr. Prothoracic granules fairly distinct before abrasion .. *pentagonalis*
- CC. Mesosternum with intercoxal process not projecting.
- D. Abdomen tuberculate.
- s. Basal segment without tubercle, but second with two.
- t. Tubercles as close to sides as to each other .. *setistriatus*
- tt. Tubercles much closer to each other than to sides.
- u. Small and thin, and front coxae not very widely separated .. .. *lenuis*
- uu. Large and robust, and front coxae widely separated .. .. *ampliocollis*
- ss. Basal segment with one tubercle.
- v. Prothoracic granules transversely arranged *bimaculatus*
- vv. Prothoracic granules not transversely arranged.
- w. Second segment also tuberculate .. .. *emarginatus*
- ww. Second not tuberculate.
- x. Tubercle submedian ... .. *tuberculiventris*
- xx. Tubercle apical .. .. *bivitticollis*
- sss. Basal segment with two tubercles.
- y. Tubercles not at extreme tip.
- z. Front coxae touching .. .. *geminatus*
- zz. Front coxae widely separated.
- a. Distance between tubercles more than length of second segment in middle .. *glaber*
- aa. Distance less .. .. *decipiens*
- yy. Tubercles at extreme tip.
- b. A wide depression between tubercles .. *taylori*
- bb. Without such a depression.
- c. Front coxae feebly separated .. .. *murrayi*
- cc. Front coxae conspicuously separated
- d. Alternate interstices of elytra elevated .. .. *latens*
- dd. Alternate interstices not elevated .. *lutosus*
- DD. Abdomen carinate.
- e. A longitudinal carina on each side of middle of basal segment.
- f. Prothoracic granules transversely arranged *excavatus*
- ff. Prothoracic granules not transversely arranged .. .. *armivarius*
- ee. A transverse or curved carina on basal segment.
- g. Front coxae touching, or apparently so.
- h. All tibiae deeply notched .. .. *insignipes*
- hh. All tibiae not notched.
- i. Basal segment of abdomen straight in middle of apex.
- j. Base of elytra trisinnate .. .. *bryophagus*
- jj. Base of elytra evenly arched .. *litoralis*

- ii. Basal segment somewhat incurved at middle of apex.  
   *k.* Elytra with conspicuous tubercles about summit of apical slope. . . *denticulatus*  
   *kk.* Elytra without tubercles there.  
     *l.* Hind tibiae dentate about middle *adventus*  
     *ll.* Hind tibiae not dentate about middle . . . . . *brevicarinatus*  
*gg.* Front coxae distinctly and usually widely separated.  
   *m.* Carina not touching middle of apex of segment.  
     *n.* Carina strongly elevated and inclined forwards . . . . . *severini*  
     *nn.* Carina quite straight . . . . . *recticarinatus*  
   *nnn.* Carina distinctly curved.  
     *o.* Elytra tuberculate about summit of apical slope . . . . . *arciferus*  
     *oo.* Elytra not tuberculate there.  
     *p.* Female with a conspicuous interocular tubercle . . *interocularis*  
     *pp.* Female without such . . *carteri*  
   *mm.* Carina with its middle touching apex of segment.  
     *q.* Hind tibiae (except at tip) not dentate or denticulate.  
     *r.* Second abdominal segment also carinate . . . . . *magnicollis*  
     *rr.* Second not carinate.  
       *s.* Carina with a row of punctures . . . . . *longicollis*  
       *ss.* Carina impunctate . . . . . *blackburni*  
*qq.* Hind tibiae dentate or denticulate.  
   *t.* Second segment feebly carinate *bicarinatus*  
   *tt.* Second segment not carinate.  
     *u.* Intercoxal process of mesosternum narrower than distance between middle and hind coxae.  
     *v.* Granules of basal segment of abdomen unusually conspicuous . . . . . *granulatus*  
     *vv.* Granules of basal segment small and inconspicuous.  
     *w.* Scutellum small and shining . . . . . *sabulosus*  
     *ww.* Scutellum not traceable . . . . . *sydneyensis*  
     *uu.* Intercoxal process at least as wide as distance between middle and hind coxae.  
     *x.* Very small . . . . . *minutus*

- xx.* Of moderate size.  
*y.* Surface near carina with crowded punctures and no granules.  
*z.* Apex of basal segment of abdomen evenly arched .. *punctiventris*  
*zz.* Apex rather suddenly incurved at middle .. .. *hystricosus*  
*yy.* Surface near carina with granules as well as punctures.  
*a.* Elytral suture with small shining granules .. *fuliginus*  
*aa.* Without such granules .. .. *imitator*  
 DDD. Abdomen neither tuberculate nor carinate.  
 E. *Metasternum* bituberculate .. .. *metasternalis*  
 EE. *Metasternum* not bituberculate.  
 F. Elytra tuberculate.  
*b.* Hind tibiae dentate at base .. .. *scaber*  
*bb.* Hind tibiae not dentate there.  
*c.* Front coxae touching, or almost so.  
*d.* Sides of prothorax bilobed.  
*e.* Shoulders conspicuously produced .. .. *bilobicollis*  
*ee.* Shoulders rounded off .. .. *vigilans*  
*dd.* Sides of prothorax not bilobed.  
*f.* Size moderate .. .. *hypulus*  
*ff.* Size minute.  
*g.* Elytral tubercles with conspicuous setae .. .. *norfolkensis*  
*gg.* Elytral tubercles without such .. .. *nodipennis*  
*cc.* Front coxae widely separated.  
*h.* Middle coxae almost as widely separated as hind ones .. .. *campylocaemis*  
*hh.* Middle coxae much closer together.  
*i.* Under surface with dense and long hairs .. .. *mirabilis*  
*ii.* Under surface without such.  
*j.* Sides of prothorax bilobed .. *collaris*  
*jj.* Sides not bilobed.  
*k.* Shoulders separately and suddenly produced .. *ferruginus*  
*kk.* Shoulders not produced except with even arcuation of base.  
*l.* Hind tibiae suddenly and strongly incurved at apex .. .. *valgus*

- ll.* Hind tibiae not as in *valgus*.  
*m.* Elytra conjointly arcuate at base .. *funereus*  
*mm.* Elytra trisinate at base.  
*n.* Hind tibiae strongly narrowed on inner side between middle and apex .. *coatesi*  
*nn.* Hind tibiae not strongly narrowed there .. *irrasus*
- FF. Elytra non-tuberculate (at least elsewhere than near shoulders).
- G. Prothoracic granules transversely arranged or subcarinate, or multicarinate.
- o.* Middle coxae ridged or dentate.  
*p.* Hind tibiae dentate at basal third .. *medeocalis*  
*pp.* Hind tibiae not dentate there.  
*q.* Front tibiae distinctly notched on one side of apex .. .. *dentipes*  
*qq.* Front tibiae not so notched .. .. *oxyomus*
- oo.* Middle coxae not armed.  
*r.* Hind tibiae subdentate near base .. .. *trisinuatus*  
*rr.* Hind tibiae not subdentate there.  
*s.* Basal segment of abdomen with a polished semicircular space .. .. *abdominalis*  
*ss.* Basal segment without such a space.  
*t.* Shoulders acutely produced forwards .. .. *acutangulus*  
*tt.* Shoulders not so produced.  
*u.* More than 3 mm. in length.  
*v.* Derm of abdomen not concealed by clothing .. *cræwfordi*  
*vv.* Derm of abdomen more or less concealed.  
*w.* Apical slope of elytra subtuberculate .. .. *transversus*  
*ww.* Apical slope not subtuberculate .. .. *setosus*
- uu.* At most 3 mm. in length.  
*x.* Abdominal clothing not concealing derm .. .. *multicarinatus*  
*xx.* Abdominal clothing normally concealing derm.  
*y.* Without a posthumeral tubercle or swelling .. *striatus*



- yy*. With such.  
*z*. Interstices of elytra even .. .. . *arcuatus*  
*zz*. Alternate interstices feebly elevated.  
*a*. Width of elytra at summit of apical slope as great as at base .. .. . *latebricola*  
*aa*. Width there less .. .. . *subhumeralis*
- GG. Prothoracic granules not transversely arranged.
- H. Scape very stout.
- b*. Pronotum with large, isolated granules .. .. . *nodicollis*  
*bb*. Pronotum with denser and smaller granules.  
*c*. Base of rostrum suddenly elevated .. .. . *ammophilus*  
*cc*. Base not suddenly elevated.  
*d*. Elytra with an interrupted post-median pale fascia .. .. . *herbivorus*  
*dd*. Elytra without such a fascia.  
*e*. Less than 4 mm. in length .. .. . *pondericornis*  
*ee*. More than 4 mm. in length .. .. . *crassicornis*
- III. Scape at most moderately stout.
- I. Hind tibiae armed .. .. . *fergusoni*
- II. Hind tibiae not armed.
- J. Front coxae touching.
- g*. Antennae unusually long and thin .. .. . *tenuicornis*  
*gg*. Antennae normal.  
*h*. Hind tibiae conspicuously fringed with long hairs in both sexes .. .. . *inuitatus*  
*hh*. Hind tibiae not so fringed.  
*i*. Prothorax, even after abrasion, without conspicuous granules.  
*j*. Fairly large .. .. . *howensis*  
*jj*. Small.  
*k*. Elytra fully twice as long as wide .. .. . *inconspicuus*  
*kk*. Elytra less than twice as long as wide.  
*l*. Eyes smaller, and with larger facets than usual .. .. . *puncticollis*  
*ll*. Eyes normal .. .. . *squamibundus*
- ii*. Prothorax, at least after abrasion, with conspicuous granules.  
*m*. Distance between eyes less than width of an eye .. .. . *macrops*  
*mm*. Distance between eyes more than width of an eye.  
*n*. Elytra maculate.  
*o*. Sides of elytra parallel for part of their length .. .. . *maculatus*  
*oo*. Sides of elytra nowhere parallel .. .. . *cordipennis*

- m.* Elytra inconspicuously or not at all maculate.
- p.* Elytral clothing more or less rough.
- q.* A conspicuous prominence between scutellar region and each shoulder .. .. *microps*
- qq.* Without such .. .. *coxalis*
- pp.* Elytral clothing evenly planing surface.
- r.* A polished, deep cavity on abdomen and metasternum .. .. *gymnogaster*
- rr.* Depression shallower and not polished.
- s.* At least 4 mm. in length *alpinus*
- ss.* Less than 4 mm. .. *museivorus*
- JJ. Front coxae distinctly and usually widely separated.
- K. A sudden and deep cavity common to metasternum and abdomen .. .. *foveatus*
- KK. Cavity, if present, not both sudden and deep.
- L. Granules in middle of pronotum with setae only.
- l.* Basal segment of abdomen without granules, size small .. .. *reticulatus*
- ll.* Basal segment with granules, size larger.
- u.* Elytral granules apparently confined to suture .. .. *seticollis*
- uu.* Elytral granules visible elsewhere before abrasion .. .. *caviventris*
- LL. Granules (if present) both setose and squamose.
- M. Hind coxae armed .. .. *postcoxalis*
- MM. Hind coxae unarmed.
- N. Front coxae much more widely separated than middle ones .. .. *hoplocnemus*
- NN. Front and middle coxae widely and almost (or quite) equally separated.
- v.* Middle coxae armed .. .. *libialis*
- vv.* Middle coxae unarmed.
- w.* Metasternum and basal segment of abdomen densely pilose .. .. *piliventris*
- ww.* Under surface not densely pilose .. .. *raui*

- NNN. Front coxae less widely separated than middle ones.
- O. Front tibiae strongly dentate towards base .. .. . *avenaceus*
- OO. Front tibiae denticulate at most.
- P. Minute .. .. . *microscopicus*
- PP. At least 3 mm. in length and usually much more.
- Q. Elytra distinctly trisinate at base *humeralis*
- QQ. Elytra scarcely, if at all, trisinate at base.
- R. Suture, on abrasion, distinctly paler than adjacent parts .. *suturalis*
- RR. Suture not paler.
- S. Elytra with scales only .. .. *squamosus*
- SS. Elytra with scales and setae ..
- T. Intercoxal process of mesosternum wider than coxae .. *rufimanus*
- TT. That process narrower than coxae.
- U. Hind tibiae suddenly thinned from about the middle .. *cellaris*
- UU. Hind tibiae not as in *cellaris*.
- V. Prothorax, on abrasion, with very minute granules.
- x.* Ciliation of front tibiae rather dense and long *similis*
- xx.* Ciliation shorter and much sparser .. *ochreonotatus*
- VV. Prothorax, on abrasion, with large but almost obsolete granules.
- y.* Derm normally almost flavous .. .. *pallidus*
- yy.* Derm normally much darker .. .. *blackmorei*
- VVV. Prothorax, on abrasion, with ordinarily distinct granules.
- W. Abdomen almost glabrous .. *subglaber*
- WW. Basal segment squamose and setose in middle.
- z.* Ciliation of front tibiae long and fairly dense *ciliatus*
- zz.* Front tibiae with sparse and rather long setae, but not ciliate *angustus*
- WWW. Basal segment setose only in middle.
- X. Prothorax as wide as elytra *albonotatus*

- XX. Prothorax narrower than  
elytra.
- Y. Depression of abdomen  
confined to basal seg-  
ment . . . . . *spureus*
- YY. Depression continued on  
to second segment . . . . . *angustipictus*

## NOTES ON KEY.

As in previous tables, the present one deals with males, except that *M. carteri* and *M. interocularis* are separated by their females. It does not appear possible to give a table of females by which most of those known may be identified with certainty, and many were not described, as it was found impossible to associate them with their appropriate males.

The transverse arrangement of the prothoracic granules of many species is generally quite conspicuous before abrasion, and is usually due to some of the granules being placed in irregular transverse rows, rather than more or less closely compacted; but the character alters, till on some species the surface, after abrasion, is seen to be traversed by numerous fine and quite sharply defined carinae, which may or may not be interrupted; on *M. crawfordi* and *M. multicarinatus*, in particular, they are very distinct. On several species there is a faint indication of transverse arrangement on the sides only, but this has not been considered as warranting the species being placed with those having the transverse arrangement present.

In the 1914 table some of the species were associated as having "Front. coxae more or less widely separated", as against "Front. coxae not widely separated", the latter being again divided into those in which the coxae were in actual contact and those in which they were slightly separated. As these divisions were not always easy of application, the main ones now used are those in which the coxae are in actual contact, and those in which they are distinctly, and usually very conspicuously separated. As the front. coxae of the males are often slightly larger than those of the females, their distance apart is sometimes slightly less than in the females.

C. p. On *M. variabilis* the elytra, when viewed from behind, are seen to have the clothing rather dense; the other species, when so viewed, appear to have stouter setae, mostly in single series.

D. x. On *M. tuberculiventris* the tubercle might be fairly regarded as a short carina.

DD. ff. On *M. armicarius* the abdomen might be regarded as having the abdomen tuberculate, instead of carinate; if so regarded it could be associated with *M. glaber* and *M. decipiens*, two much larger and shining species.

DD. *g*. In the 1914 table four species with carinated abdomen were associated by "Front coxae feebly separated". Of these *M. litoralis* really has the front coxae touching, although owing to a slight amount of dirt this was not evident on the type. On *M. advenus* the separation is so slight that they might fairly be regarded as touching. On *M. bicarinatus* and *M. blackburni* they are separated less widely than on most species of DD. *gg*, but the separation is quite distinct.

DD. *r*. In the table *M. magnicollis* and *M. blackburni* are separated by characters of the abdomen; on one male of *blackburni* there is a slight abrasion of the second segment, as a result of which a shining line might be considered a carina; but on *magnicollis* the carina on the second segment is curved, and much more distinct than that on the basal segment.

DD. *uu*. The middle and hind coxae are at their closest in a somewhat oblique direction; the species associated here also have their front coxae unusually widely separated.

DD. *zz*. The curved carina, at first glance, appears to have its middle some distance from the apex of the basal segment of the abdomen, but on close examination the suture is seen to be rather suddenly incurved at its middle, so that the hind margin of the segment is really partly formed by the carina.

G. On all species the front coxae are distinctly and usually widely separated.

G. *s*. Not a carina, but a flat space, arched at its posterior end.

G. *t*. On this species the transverse arrangement of the granules is less conspicuous than on others of G.

G. *u*. The lengths given are exclusive of the rostrum.

G. *xx*. The abdomen of the type of *M. areolatus* has been partly abraded, as is evidenced by the dense clothing of the non-abraded parts.

GG. On the sides of some species a slight transverse arrangement of the granules may be traced, but this is not continued across the disc, as on the species of G.

H. On all the species the front coxae are touching.

H. *b*. The granules are often concealed by dried mud, and a certain amount of abrasion is needed to see them clearly, even on specimens in good condition.

I. This does not refer to the apical spur, present on all species of the genus.

I. *f* and *ff*. Not used in table.

J. *n*. On specimens in poor condition the spots are more or less obliterated.

J. *r*. On the two following species the abdomen is depressed, but there is not a specially deep polished black space along the middle.

K. On *M. curviventris*, and several other species, the depression on the under surface is large, but is shallow posteriorly.

NNN. On *M. rufimanus*, and several other species, the front coxae are quite evidently separated, the middle ones still more conspicuously so.

Names that have been used in *Mandalotus* or *Dysostines*, but are not included in the table, are as follows:

<i>carinativentris</i> Lea	= <i>fuliginus</i> Pasc.
<i>imponderosus</i> Lea	Only female known.
<i>tatus</i> Lea	Only female known.
<i>pilipes</i> Pasc.	Now <i>Timareta</i> .
<i>pilosus</i> Blackb.	Now <i>Timareta</i> .
<i>pinguis</i> Lea	Now <i>Timareta</i> .
<i>pusittus</i> Lea	Now <i>Timareta</i> .
<i>pustulosus</i> Pasc.	= <i>T. pilipes</i> Pasc.
<i>rigidus</i> Er.	= <i>crudus</i> Er.
<i>rufipes</i> Lea	Only female known.
<i>ventralis</i> Blackb.	= <i>sterilis</i> Er.
<i>vetutus</i> Er.	= <i>steritis</i> Er.
<i>wedgensis</i> Lea	= <i>punctiventris</i> Blackb.

#### MANDALOTUS STERILIS Er.

Fig. 78 a.

In the original diagnosis of *Mandalotus*, and of the four species attributed to it, Erichson never even mentioned the abdomen. On examination of the type, however, Blackburn (1) said that of *M. sterilis*, which he presumed to be a male, "the suture between the first and second ventral segments is extremely fine, and the segments themselves on the same plane"; and stated that he considered *M. vetutus* to be its female. He also considered that *Dysostines fuliginus* was a synonym of *steritis*. Subsequently (2) I commented on some specimens as probably sexes of *steritis*, and in 1914 included them in the table under that name. These specimens, however, are certainly all females of *M. ventralis*. The species occurs commonly at the roots of beach-growing plants in Tasmania, Victoria, and South Australia, and I have examined hundreds of specimens of both sexes. The male is distinct by the basal segment of the abdomen having its middle largely encroaching on the second segment, with the encroachment highly polished; the markings of the upper surface vary considerably, and the length (without the rostrum) varies from 4 to 8 mm. The female, in addition to many other sexual distinctions, has the suture between the two basal segments of abdomen very faint, except at the sides, and is the only female in the genus known to me in which it is not distinct throughout. I am now fully convinced that the type specimens commented upon by Blackburn as sexes of one species

(1) Blackburn, Trans. Roy. Soc., S. Austr., 1901, p. 27.

(2) Lea, *l.c.*, 1907, p. 136.

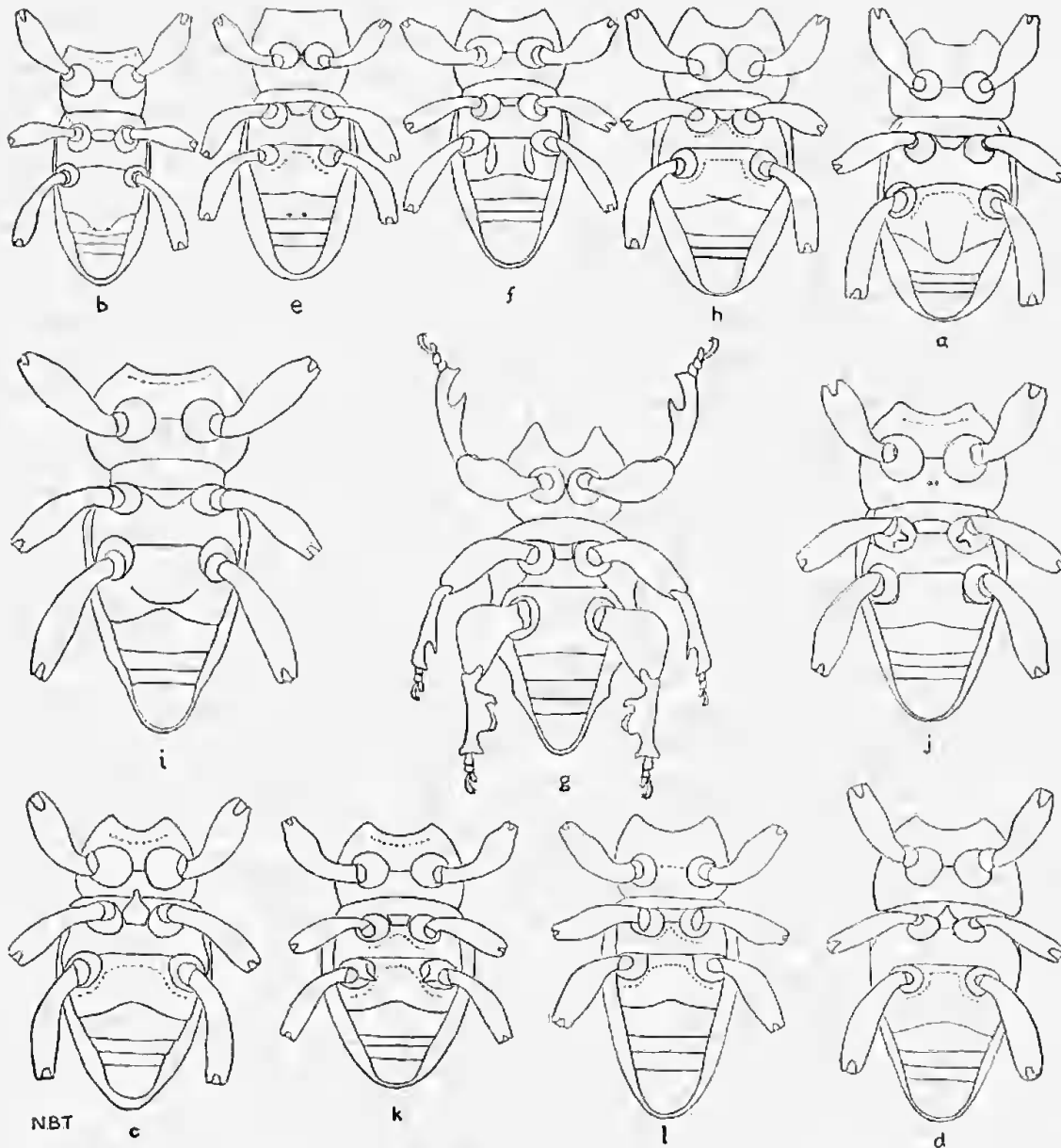


Fig. 78. a, Under surface of *Mandalotus sterilis* Er; b, of *M. squalidus* Lea; c, of *M. pyrifer* Lea; d, of *M. auchmeresthes* Lea; e, of *M. tenuis* Lea; f, of *M. armicarius* Lea; g, of *M. insignipes* Lea; h, of *M. brevicarinatus* Lea; i, of *M. hystricosus* Lea; j, of *M. medeoralis* Lea; k, of *M. postcoralis* Lea; l, of *M. hoplocnemus* Lea.

(*sterilis* male and *vetulus* female) are really both females of *ventralis*, and that the specimens I commented upon as sexes of *sterilis* are also all females of *ventralis*. Blackburn's conjecture that *Dysostlines fuliginus* is a synonym of *sterilis* is incorrect; the male of *fuliginus* has a conspicuous carina on the basal segment of the abdomen, and is the species I subsequently named *cariniventris*,

although on commenting on some British Museum specimens of *fuliginus* <sup>(3)</sup> I was still under the impression that the abdomen was simple in both sexes of *sterilis*. The synonymy of these species is therefore as follows:

*M. sterilis* Er.

*M. vetulus* Er.

*Dysostines ventralis* Blackb.

*M. fuliginus* Pasc. (*Dysostines*).

*M. carinativentris* Lea.

### MANDALOTUS PUNCTIVENTRIS Blackb.

Fig. 80, a.

*M. wedgensis* Lea.

In commenting upon a cotype male of *M. punctiventris*, on a previous occasion <sup>(1)</sup>, I stated that a curved line on the basal segment of the abdomen could hardly be considered as a carina; on re-examination, and on comparison with the type of *M. wedgensis* (unfortunately now to be recorded as a synonym of it), it appears to be slightly variable in its elevation; in the accompanying table it is now placed with those having the abdomen carinated. The comments upon the armature of the middle tibiae should have been upon the hind ones.

### MANDALOTUS INTERCOXALIS Lea.

Fig. 80, y.

The hind coxae of this species are armed somewhat as in *M. postcoxalis*, from which it is at once distinguished by the intercoxal process of the mesosternum.

### MANDALOTUS CARTERI Lea.

Five specimens, taken at an elevation of 5,000 feet on Mount Kosciusko, differ from the type in having the legs and sterna less hairy, and the prothoracic granules less distinct, both before and after abrasion.

### MANDALOTUS LONGICOLLIS Lea.

Three females, taken with a male at an elevation of 5,000 feet on Mount Kosciusko, differ from it in being shorter and more compact, the abdomen shorter and more convex, its basal segment non-carinate, and all the tibiae simple.

<sup>(3)</sup> Lea, *l.c.*, 1911, p. 75.

<sup>(1)</sup> Lea, *l.c.*, 1914, p. 304.



**MANDALOTUS SQUALIDUS** Lea.

Fig. 78, b.

In the original description of this species the second segment of the abdomen was described as having two small tubercles in the middle, and the species was placed in the 1914 table of the genus in a position based on that supposed character. The type, however, was somewhat dirty, and on examination of fresh specimens from Quorn and Peterborough it became evident that the tubercles are really on the basal segment, the apex of this being strongly produced in the middle, somewhat as on the male of *M. sterilis (ventralis)*, although the two species are very unlike in other respects.

**MANDALOTUS CRASSICORNIS** Lea.

Three specimens from Stradbroke Island are smaller than usual, and their scales are pale ashen-grey, with faintly infuscated spots.

**MANDALOTUS PONDERICORNIS** Lea.

Fig. 80, v.

Four specimens, three males and one female, from Lakes Entrance (Victoria) evidently belong to this species. The male differs from the female in having the basal segments of abdomen quite flat or even faintly depressed, and with the intercoxal process of mesosternum feebly produced in front, although not conical. On one of the males there are several whitish spots scattered about on the elytra; on two of them the alternate interstices of the elytra are more noticeably elevated than on the others.

**MANDALOTUS INUSITATUS** Lea.

Fig. 80, b.

On preparing to draw a hind tibia of a specimen of this species, Mr. Tindale noticed that its left hind tarsus was distinctly five-jointed, the others all being normal.

**MANDALOTUS PUSILLUS** Lea (now **TIMARETA**).

On floating off the type of this species for re-examination, it was found that the apex of the prosternum is scarcely incurved in the middle, and that the ocular lobes are entirely absent. It is therefore a *Timareta*.

**MANDALOTUS ADVENUS** Blackb. Fig. 80, c.**M. ARMIPECTUS** Lea. Fig. 80, x.**M. BLACKMOREI** Lea. Fig. 80, s.**M. CARINATIPES** Lea. Fig. 80, d.**M. CELLARIS** Pasc. Fig. 80, e.**M. CRAWFORDI** Blackb. Fig. 79, a.**M. CRUDUS** Er. Fig. 79, b.**M. DENTIPES** Lea. Fig. 80, n.**M. FERGUSONI** Lea. Fig. 80, f.**M. GRANULATUS** Lea. Fig. 80, g.**M. INTEROCULARIS** Lea. Fig. 80, t.**M. LAMINATIPES** Lea. Fig. 80, o.**M. LAMINIPECTUS** Lea. Fig. 80, z.**M. MESOSTERNALIS** Lea. Fig. 80, aa.**M. RUDIS** Lea. Fig. 80, h.**M. SCABER** Lea. Fig. 80, i.**M. SYDNEYENSIS** Lea. Fig. 80, j.**M. TENUICORNIS** Lea. Fig. 80, w.

Sketches of parts of these species are given for purposes of comparison, but it is to be noted that the appearance of the tibiae varies from almost every point of view.

**MANDALOTUS INSULARIS** sp. nov.

♂ Blackish-brown, antennae and parts of legs reddish. Densely clothed with muddy brown scales, interspersed with stiff, suberect setae.

Rostrum short and strongly curved; median carina traceable only at apex. Antennae not very thin. Prothorax moderately transverse, with small granules,

inconspicuous before abrasion. Elytra conjointly arcuate at base, shoulders oblique, a notch between each, and a distinct posthumeral prominence; with rows of large punctures, much wider than interstices, but appearing much smaller through clothing; interstices even. Basal segment of abdomen depressed in middle, with numerous fine lines and small punctures, its apex slightly impinging on second and with two small but distinct tubercles. Front coxae rather widely separated, tibiae spurred at apex. Length, 4 mm. The lengths given are exclusive of the rostrum.

*Hab.* Queensland: Stradbroke Island (H. J. Carter). Type (unique), I. 15986.

The middle of the basal segment of abdomen is slightly arched outwards, so that it really impinges on the second, although not by much; regarding it as such in the table it is associated with *M. squalidus*, from which it differs in being wider, the produced part less and with the tubercles almost as distant from each other as from the sides. Regarding it as belonging to D. of the table, it could be associated with *M. latens* and *M. lutosus*, two much smaller species: *lutosus*, whose tubercles are about as far apart, is a thinner species, with more conspicuous prothoracic granules and scarcely evident posthumeral prominence; *latens* is wider, with the basal segment of abdomen flat in middle, and its tubercles close together. From the side each tubercle appears as the abrupt ending of a short ridge, but from in front or behind each appears distinctly conical. The colour of the derm of the type is as described, but that of many species of the genus varies from reddish-brown to black.

#### MANDALOTUS UNIFORMIS sp. nov.

Fig. 80, bb.

♂ Blackish, antennae and tarsi dull reddish. Densely clothed with muddy-brown scales, and with stout, decumbent setae, on the elytra seriate in arrangement.

Rostrum moderately curved; median carina partly concealed. Antennae rather short. Prothorax moderately transverse, median line distinct; granules and punctures ill-defined through clothing. Elytra conjointly rather feebly arcuate at base, alternate interstices slightly elevated; with regular rows of large punctures but appearing much smaller through clothing; posthumeral prominence feeble. Abdomen gently convex, except that intercoxal process is slightly depressed; intercoxal process of mesosternum moderately wide, projecting obliquely forwards, with its tip obtuse and feebly bifid; intercoxal process of prosternum about half the width of coxae. Femora stout, tibiae rather strongly bisinuate on lower surface. Length, 3.75 mm.

*Hab.* Victoria; Mount Feathertop, 6,000 feet, in August (F. E. Wilson from C. Barrett). Type (unique), I. 15946.

The intercoxal process of the mesosternum being bifid (although very feebly so) associates the species with *M. incisus*, from which it differs in being smaller, prothorax with granules much less conspicuous, elytra less uneven, and tibiae more strongly bisinuate. The femora are obscurely ringed; on the abdomen the clothing consists almost entirely of scales, concealing dense and small punctures, except the curved basal row of large ones.

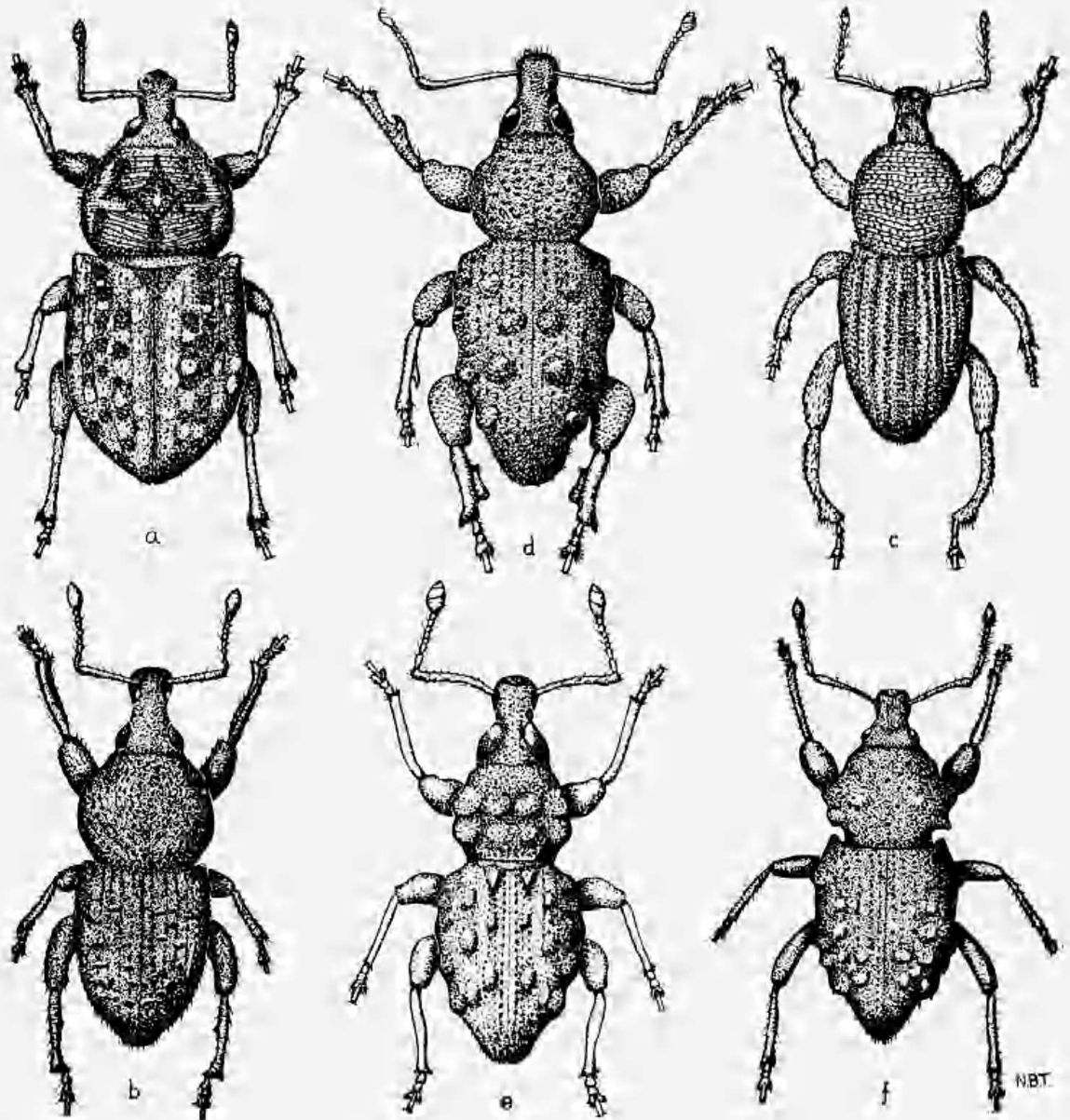


Fig. 79. a, *Mandalatus cranfordii* Blackb.; b, *M. crudus* Erichs.; c, *M. purifer* Lea; d, *M. insignipes* Lea; e, *M. vigilans* Lea; f, *M. bilobocollis* Lea.

**MANDALOTUS PYRIFER** sp. nov.

Figs. 78, c; 79, c; 80, p.

♂ Black, antennae and parts of legs obscurely reddish. Densely clothed with muddy-brown scales, and with stout depressed setae, on the elytra dense on the suture and odd interstices, rather sparse on the even ones; legs with thinner and less depressed setae, altering to thin hairs on the under surface of tibiae.

Rostrum stout and curved, median carina concealed. Antennae rather thin. Prothorax almost as long as wide, sides strongly and evenly rounded; granules conspicuously transversely arranged. Elytra conjointly areolate at base, shoulders prominent, a notch behind each, alternate interstices slightly elevated; punctures normally concealed, except on sides, where they appear very small. Metasternum and two basal segments of abdomen with a wide shallow depression, on which the setae are thinner and more numerous than on the rest of the surface. Mesosternum with a large projecting process, stout at the base, almost acutely conical in front. Front coxae widely separated; femora stout; front tibiae with several acute teeth on the lower surface, the tip acutely produced. Length, 6.5 mm.

*Hub.* New South Wales: Jindabyne (H. J. Carter).

In the table associated with *M. mesosternalis*, from which it is at once distinguished by the front tibiae, it is also a somewhat larger species, with the mesosternal process more thickened towards base (pear-shaped with the stalk end in front). The clothing of the under surface is somewhat paler than that of the upper surface, and on the depressed parts the setae are thinner than elsewhere; the femora are feebly ringed. There are numerous small dark spots on the elytra. The teeth on the front tibiae are very conspicuous from several directions; on the hind tibiae there are a few inconspicuous ones near the inner apex. No part of the type has been abraded, but the transverse arrangement of the prothoracic granules is so conspicuous that the surface appears to be crossed by numerous thin lines; on the elytra the only punctures indicated are some of the lateral ones, but they are no doubt of large size, both there and elsewhere.

**MANDALOTUS AUCHMERESTHES** sp. nov.

Fig. 78, d.

♂ Black, tarsi obscurely reddish. Densely clothed with muddy-brown, obscurely variegated scales, interspersed with stout setae; tibiae sparsely ciliated.

Rostrum short, strongly curved, median carina normally concealed. Antennae comparatively thin. Prothorax almost as long as wide, sides strongly rounded, median line distinct; with rather large, round, feebly elevated granules, fairly distinct before abrasion only on the sides. Elytra conjointly arcuate at base,

shoulders prominent, a notch behind each, behind which the posthumeral tubercle is rather conspicuous; alternate interstices feebly elevated and with slight swellings, scarcely tubercles, about summit of apical slope; with rows of large punctures, appearing much smaller through clothing. Metasternum and basal segment of abdomen with a wide, but not very deep depression. Intercostal process of mesosternum prominent, obliquely dilated from base to near middle, and then obliquely narrowed to apex, which is rather acute. Front coxae rather widely separated, tibiae spurred at apex. Length, 4.5-5.5 mm.

♀ Differs in being somewhat wider, abdomen and metasternum without a depression, intercostal process of mesosternum much shorter, the apex very obtusely produced, legs shorter and stouter, front coxae slightly more apart, and tibiae less curved towards apex, with their under surface setose.

*Hab.* New South Wales: Eccleston, abundant (J. Hopson). Type, 1, 15947.

The apical half of the elytra is not irregular owing to tubercles, although some of the interstices are somewhat thickened, so the species in the 1914 table of the genus could be associated with *M. variabilis* and *M. vacillans*; from the former it differs in its clothing and in the tip of the front tibiae (arched inwards at the apex, instead of dilated both inwards and outwards there); from the latter by the very different shape of the mesosternal process. On an occasional specimen the legs are obscurely reddish, but they are usually deep black; the antennae are almost black. On the pronotum the granules, even on the sides, are normally inconspicuous before abrasion. The elytral punctures are large, close together, and decidedly wider than the interstices, but before abrasion they appear to be not very close together, and less than half the width of the latter; they are larger and less rounded on the male than on the female.

### MANDALOTUS PENTAGONALIS sp. nov.

Fig. 80, cc.

♂ Dark brown, under surface and legs pale castaneous, antennae darker. Densely clothed with dark brown scales, becoming greyish on the sides and legs; in addition with numerous short setae; under surface with scales and setae on the sides, but with setae only elsewhere.

Rostrum short and curved; median carina concealed. Antennae comparatively thin. Prothorax moderately transverse, sides rounded and widest at apical third, median line obsolete, granules crowded and fairly distinct through clothing. Elytra conjointly arcuate at base, shoulders rounded, posthumeral prominence very feeble, alternate interstices feebly elevated; punctures appearing rather small through clothing. Abdomen with crowded, and rather small, asperate

punctures, quite distinct through the sparse clothing; basal segment and metasternum with a shallow, wide depression. Intercoxal process slightly projecting, sides obliquely dilated from base to beyond the middle, and then narrowed to apex. Front coxae slightly but distinctly separated; all tibiae spurred at apex. Length, 5 mm.

*Hab.* Victoria: Cheltenham, from moss in April (F. E. Wilson). Type (unique), I. 15948.

The mesosternal process is shaped much as in the preceding species, but is smaller, and the front coxae are closer together; the two species differ also in the abdomen, and the present species has the prothoracic granules fairly distinct before abrasion, even in the middle. The type is probably immature, but several species are normally quite as pale. It has not been abraded to make sure of the size of the elytral punctures, but they are probably large; before abrasion they appear to be much narrower than the interstices.

#### **MANDALOTUS SETISTRIATUS** sp. nov.

Fig. 80, k.

♂ Black, antennae and tarsi reddish. Densely clothed with muddy-brown scales, interspersed with stiff, sloping setae.

Rostrum short, moderately curved; median carina clothed but normally traceable. Antennae moderately thin. Prothorax slightly transverse, sides strongly and evenly rounded; granules small, and normally traceable before abrasion only on the sides. Elytra conjointly rather deeply arcuate at base, posthumeral tubercle not traceable, interstices even; punctures of large size, but appearing much smaller through clothing. Basal segment of abdomen with two small and rather acute tubercles, slightly closer to sides than to each other. Front coxae almost as widely separated as middle ones; hind tibiae with a small acute tooth one-third from apex. Length, 3.5 mm.

*Hab.* New South Wales: Hastings River (T. G. Sloane). Type (unique), I. 15954.

Very distinct by the abdomen and hind tibiae. The elytra, when viewed from behind, appear to have the setae in quite regular rows; after abrasion their punctures are seen to be distinctly wider than the interstices.

#### **MANDALOTUS TENUIS** sp. nov.

Fig. 78, e.

♂ Blackish, antennae and legs obscurely reddish. Moderately clothed with ashen grey scales, interspersed with setae; most of under surface polished and glabrous.

Head with base bald and shining. Eyes much smaller than usual in genus. Rostrum not very long, rather suddenly dilated about apex; median carina inconspicuous. Antennae moderately long. Prothorax distinctly longer than wide, median line well defined; granules small, numerous, and rather rough. Elytra elongate, base feebly conjointly areolate, shoulders rounded, posthumeral prominence almost absent; alternate interstices feebly elevated; with regular rows of large punctures. Abdomen with well-defined punctures, more crowded on apical segment than elsewhere, second segment with two small, acute tubercles, close together near the tip. Intercostal process of mesosternum about the width of coxae. Front coxae almost touching; tibiae strongly incurved on one side between middle and apex. Length, 2.25 mm.

*Hab.* Victoria: Beaconsfield, in March, April, and July (F. E. Wilson). Type, I. 15953.

In the table associated with *M. amplipollis*, from which it differs widely; from the preceding species it differs in the distance between the front coxae, in the hind tibiae, and in the distance separating the abdominal tubercles, these are very conspicuous from the sides. The ocular lobes and the incurvature at apex of prosternum are unusually feeble. The bald part of the head commences immediately behind the eyes, these being much smaller than usual. The elytral clothing is rather sparse, as a result of which the full size of most of the punctures is visible before abrasion. The hind tibiae from several points of view appear to have the inner apical half scooped out, much as on the male of *M. cellaris*. On the type the under surface is entirely black, on the second it is black, except for the apex of abdomen, on the third it is entirely bright castaneous; the last specimen was taken from a nest of the ant *Ectatomma metallicum*, but it was probably there by accident.

#### MANDALOTUS BIMACULATUS sp. nov.

♂ Black, antennae and tarsi obscurely paler. Densely clothed with sooty-brown scales, becoming paler on parts of under surface and legs, elytra with two whitish spots at base; with fairly dense, stout, curved setae, but confined to a single row on each elytral interstice.

Rostrum somewhat longer and less curved than usual, median carina concealed almost throughout. Antennae comparatively thin. Prothorax slightly wider than long, sides strongly rounded; granules conspicuously transversely arranged. Elytra conjointly arcuate at base, the width there slightly less than middle of prothorax, posthumeral tubercle distinct; interstices evenly convex; punctures conspicuous before abrasion, but appearing much smaller than they really are. Basal segment of abdomen scarcely depressed, an elongated tubercle



at middle of apex. Front and middle coxae almost equally widely separated; lower surface of hind tibiae with a tooth near apex and one at apex itself. Length, 6 mm.

*Hab.* Queensland: Mount Tambourine (C. J. Wild). Type (unique), in Queensland Museum.

An ordinary looking species, but very distinct by the prothoracic granules and abdominal carina. The front and middle tibiae have small teeth, but these are scarcely traceable through the clothing.

#### MANDALOTUS BIVITTICOLLIS sp. nov.

♂ Black, antennae and tarsi obscurely reddish. Densely clothed with sooty-brown and greyish-white scales, irregularly distributed, and with moderately stout, curved setae.

Rostrum moderately stout and curved; median carina concealed. Antennae rather long and thin. Prothorax slightly transverse, sides strongly rounded, median line feeble; granules feeble, and normally quite concealed. Elytra conjointly arcuate at base, posthumeral prominence absent; third interstice with a feeble elongated tubercle just beyond the middle, fifth with a still more feeble one nearer the apex, and remnants of others between it and the base; with almost regular rows of punctures, appearing rather small through clothing, but probably of rather large size. Basal segment of abdomen with a small acute tubercle in middle of apex. Front and middle coxae widely separated; tibiae longer and thinner than usual. Length, 3 mm.

*Hab.* Victoria: Melbourne (W. du Boulay). Type (unique), l. 15959.

In the table associated with *M. tuberculiventris*, from which it differs in being smaller and much narrower, and the abdominal tubercle practically at the apex of the basal segment instead of some distance before it; the tubercle is quite conspicuous from the sides. The scales on the pronotum are mostly sooty, but there is a conspicuous whitish vitta on each side; on the elytra they are mostly pale, but become sooty on the tubercular swellings; on most parts of the under surface the scales are rather sparse, so that the finer sculpture is not obscured.

#### MANDALOTUS ARMIVARIUS sp. nov.

Figs. 78, f; 80, q.

♂ Blackish-brown, antennae and legs obscurely reddish. Densely clothed with muddy-brown scales, interspersed with suberect setae; the under surface more sparsely clothed. Rostrum short and curved; median carina shining; and distinct from base to apical plate. Antennae rather thin. Prothorax almost as

wide as long, sides strongly and evenly rounded, median line partly obscured; granules inconspicuous before abrasion. Elytra conjointly arcuate at base, posthumeral prominence practically absent; alternate interstices very feebly elevated; punctures appearing small through clothing, when not concealed. Basal segment of abdomen and metasternum rather deeply concave, the cavity on the abdomen homed on each side by an obtuse carina, which terminates practically at the apex of the segment in a distinct tooth. Front coxae almost as widely separated as the middle ones, front tibiae subdentate near base, the hind ones acutely dentate about middle. Length, 3-3.5 mm.

♀ Differs in being somewhat wider, abdomen and metasternum not concave, the former without carinae, femora thinner, and front and hind tibiae simple.

*Hab.* Victoria: Belgrave in July and November, Ferntree Gully in April (F. E. Wilson). Type, I. 15952.

Regarding the abdomen as bituberculate, in the 1914 table of the genus, as well as in the accompanying one, the species would be associated with *M. taylori*, from which it differs in being much smaller, and with the abdominal depression continued on to the metasternum, instead of confined to the apical half of the segment; the legs also differ in many respects. Regarding the abdomen as bicarinate, it should be placed with *M. excavatus*, which has very different legs, and prothoracic granules transversely arranged. On abrasion the prothoracic granules are seen to be small, even on the sides, and the elytral punctures large and wider than the interstices. On the male the front tibiae are acutely spurred at apex: near the apex on the under side a narrow flange commences, which gradually dilates till it abruptly ends near the base, almost at a right angle. The femora of the male are somewhat roughened about the middle, but could scarcely be regarded as dentate. The antennae and legs are conspicuously red on some specimens, and on such the abdomen and other parts of the under surface are also reddish, but fully matured specimens have most of the body parts black, or almost so.

#### **MANDALOTUS INSIGNIPES sp. nov.**

Figs. 78, g; 79, d.

♂ Dark brown, antennae obscurely reddish, legs and parts of under surface somewhat castaneous. Densely clothed with brownish scales, sparsely interspersed with setae.

Rostrum short, stout, and curved; median carina concealed. Antennae rather long and thin. Prothorax moderately transverse, sides unevenly rounded; granules feebly defined before abrasion. Elytra feebly trisinate at base, shoulders rounded, suture considerably thickened on apical slope; third interstice

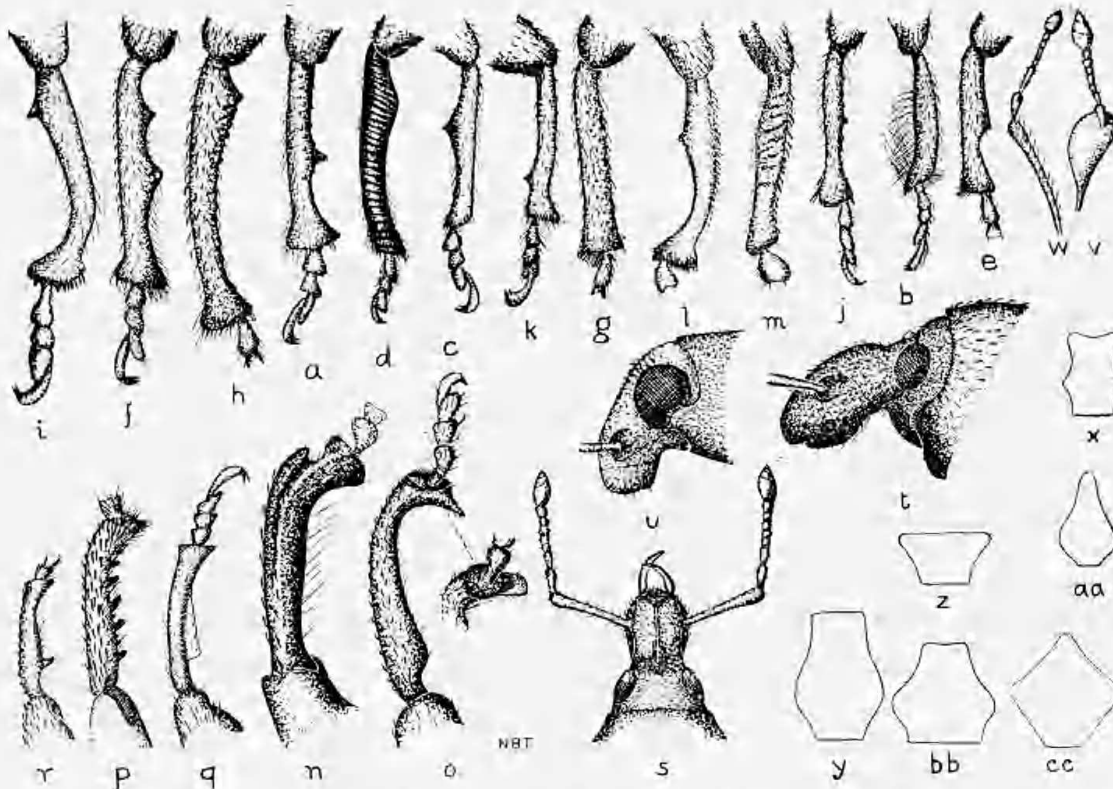


Fig. 80. a, Part of hind leg of *Mandalotus punctiventris* Blackb.; b, of *M. inusitatus* Lea (tarsus five-jointed); c, of *M. adonius* Blackb.; d, of *M. carinatipes* Lea; e, of *M. cellaris* Pasc.; f, of *M. fergusonii* Lea; g, of *M. granulatus* Lea; h, of *M. rudis* Lea; i, of *M. scaber* Lea; j, of *M. sydneyensis* Lea; k, of *M. setistriatus* Lea; l, m, of *M. medcozalis* Lea. n, Part of front leg of *M. dentipes* Lea; o, of *M. laminatipes* Lea; p, of *M. pyrifer* Lea; q, of *M. armivarius* Lea; r, of *M. hoplocnemus* Lea. s, Head of *M. blackmorei* with deciduous mandibular processes; t, of *M. interocularis* Lea, showing interocular granule; u, of *M. macrops* Lea. v, Antenna of *M. pondericornis* Lea; w, of *M. tenuicornis* Lea. x, Prosternal process of *M. unimiplectus* Lea. y, mesosternal process of *M. interocularis* Lea; z, of *M. laminiplectus* Lea; aa, of *M. mesosternalis* Lea; bb, of *M. uniformis* Lea; cc, of *M. pentagonalis* Lea.

with three tubercles, including one at base, fifth and seventh each with three, and a few smaller ones elsewhere; with large, partially concealed punctures. Abdomen with a deep depression on basal two-thirds of first segment, and continued on to metasternum. Front coxae practically touching; femora very stout; front and middle tibiae deeply notched, hind ones with two very large teeth, of which one is much larger than the other. Length, 3.5 mm.

♀ Differs in being wider, eyes smaller, prothorax less transverse, most of the elytral tubercles of smaller size, the apical slope with paler clothing, abdomen convex and simple, femora thinner and tibiae simple.

*Hab.* Victoria: Millgrove in January (F. E. Wilson). Type, I. 15950.

Its legs render this species probably the most remarkable one of the genus. The basal segment of the abdomen of the male has a deep depression, with the sides of the intercoxal process ridged; behind the depression there is a feeble

carina, interrupted in the middle, hence its position in the table. But regarding the abdomen as neither carinate nor tuberculate, and referring the species to DDD, it is distinct from all the species placed there by its remarkable tibiae. In the 1914 table it could be associated with *M. excavatus*, which has the prothoracic granules transversely arranged and ordinary legs. The eyes of the male are so large that each is fully as wide as the distance between them, although this is scarcely evident from above. The elytral tubercles are so placed as to appear in rows from almost any direction, much as trees in an orchard. The female has the under parts and legs darker than in the male, the latter probably not being fully matured when taken.

#### MANDALOTUS DENTICULATUS sp. nov.

♂ Blackish-brown, parts of antennae and of under surface obscurely reddish, legs paler. Moderately clothed with brownish scales, interspersed with fairly long setae; under surface sparsely clothed; tibiae ciliated on under surface.

Rostrum short and strongly curved; median carina not traceable. Antennae moderately long. Prothorax moderately transverse, sides and disc uneven, owing to large, partially concealed granules. Elytra slightly arcuate at base, with numerous more or less distinct tubercles; punctures large but appearing much smaller through clothing. Metasternum and basal segment of abdomen conjointly moderately concave, the depression on the abdomen bounded posteriorly by a curved and rather feeble carina, the middle of which touches the apex of the segment. Middle coxae rather widely separated, the front ones touching; femora stouter than usual; front and middle tibiae denticulate from near base, hind ones with a small acute tooth at basal third, and thence denticulate to apex. Length, 3-3.5 mm.

♀ Differs in having the elytral tubercles more unevenly placed, the arcuation of the base somewhat interrupted by the base of the third interstice on each, basal segment of abdomen gently convex and noncarinated, femora thinner, and tibiae simple.

*Hab.* Victoria: Millgrove in January, Belgrave in October and December, and Beaconsfield in August (F. E. Wilson). Type, I. 15957.

In the 1914 table of the genus this species could be associated with *M. bryophagus*, but the abdomen and its carina are different, and the elytra are conspicuously tuberculate. The carina, instead of being evenly elevated, is depressed in the middle, owing to the general concavity of the segment it is on. Small females (one of which was taken from under fallen leaves) somewhat resemble the type (a female) of *M. rufipes*, but on that species the front coxae are not in contact. On the male (only one of which was taken) the largest

tubercle is on the third interstice, just beyond the middle; it is the inner one of an oblique row of four; beyond this row is a second, of which the largest tubercle is on the fifth interstice, and there is a less conspicuous row near the apex; towards the base there are several smaller inequalities of the surface, and the suture also is thickened at the summit of the apical slope.

**MANDALOTUS BREVICARINATUS** sp. nov.

Fig. 78, h.

♂ Black, antennae and parts of the legs obscurely reddish. Densely clothed with muddy-brown scales feebly variegated with paler ones, and interspersed with numerous sloping setae.

Rostrum short and curved; median carina concealed almost throughout. Antennae moderately thin. Prothorax slightly longer than wide, sides strongly rounded; granules fairly large, close together, and distinct before abrasion. Elytra conjointly but not quite evenly arcuate at base, posthumeral prominence scarcely traceable, alternate interstices feebly elevated; punctures large and wider than interstices, but appearing very small through clothing, or even concealed. Basal segment of abdomen with a short, curved carina, not quite one-third of the width of the segment, its middle touching the tip, between it and the base the surface is depressed, somewhat shining, and with crowded punctures. Front coxae touching; front and middle tibiae feebly denticulate, the apex spurred; hind tibiae neither denticulate nor spurred. Length, 4-4.5 mm.

*Hab.* Tasmania: Launceston (Aug. Simson). Type, 1. 15958.

In the 1914 table of the genus this species could be associated with *M. bryophagus*, but the three males before me are all larger than the type of that species, the abdomen is more concave at its base, and the distance between the middle coxae is distinctly greater. There is a slight transverse arrangement of the prothoracic granules on the sides, but it is not continuous across the middle. The funicle and tarsi are paler than the rest of the appendages, at first glance the scape and club appearing to be almost black.

**MANDALOTUS RECTICARINATUS** sp. nov.

♂ Black, funicle, tarsi, and trochanters reddish. Densely clothed with muddy-brown, feebly variegated scales, interspersed with stout setae.

Rostrum short, stout, and curved; median carina not traceable. Antennae not very long. Prothorax moderately transverse, sides strongly rounded, median line distinct; granules numerous and fairly well defined, even before abrasion. Elytra conjointly arcuate at base, basal half parallel-sided, posthumeral prominence absent, alternate interstices feebly elevated; with rows of large, but

normally almost, or quite, concealed punctures. Basal segment of abdomen moderately convex, a short, straight carina fairly close to its apex. Front coxae widely separated; femora stout; tibiae spurred. Length, 2.25–2.5 mm.

♀ Differs in having the prothorax smaller, with its sides more evenly rounded, elytra wider and less evenly arcuate at base, abdomen more convex and without a carina, and legs shorter and somewhat thinner.

*Hab.* South Australia: Myponga, numerous specimens from moss (A. H. Elston). Type, L. 12870.

A small species, very distinct by the abdominal carina of the male, this being transverse, quite straight, and not much longer than the intercoxal process of the mesosternum; the species is smaller even than *M. minutus*, which has the carina arched and touching the apex of the segment. The scape and club are conspicuously darker than the funicle; on an occasional specimen the legs are almost entirely reddish, and on such the under parts are also more or less obscurely reddish. On the elytra the setae are confined to a single row on each alternate interstice. On fresh specimens there are distinct pale markings on the sides of the prothorax, and on the apical half of the elytra. On abrasion the elytral punctures of the male are seen to be almost as wide as the interstices, on the female they are somewhat smaller.

### MANDALOTUS HYSTRICOSUS sp. nov.

Fig. 78, i.

♂ Black, antennae and parts of legs more or less reddish. Densely clothed with scales varying from ochreous, through brown, to black, and thickly interspersed with stiff suberect setae; under surface of tibiae ciliated.

Rostrum stout and strongly curved; median carina thin and traceable through clothing. Antennae rather long and thin. Prothorax distinctly transverse, sides gently increasing in width from near base to beyond the middle; with rather large, flattened granules, fairly distinct before abrasion. Elytra trisinate at base, shoulders prominent, posthumeral prominence large but obtuse; with small tubercles scattered about, and two fairly large ones on the third interstice, at base and beyond the middle; punctures appearing rather small through clothing. Basal segment of abdomen with a wide curved carina, its middle touching apex of segment, owing to the sudden incurvature of the latter, between it and base depressed, shining, and with numerous small punctures. Front coxae widely separated; front tibiae with apical two-thirds of lower surface strongly arched and finely denticulate, middle tibiae less strongly arched and denticulate, hind tibiae with an inner subapical tooth, in addition to the apical spur. Length, 6 mm.

*Hab.* Tasmania: Corinna (Aug. Simson). Type (unique), I. 15955.

In the 1914 table of the genus this species could be associated with *M. longicollis* and *M. arciferus*, from both of which it is distinguished by the hind tibiae, on which there is a distinct tooth near the inner apex; on *longicollis* the apex itself curves round, so as to present the appearance of a semi-double tooth; on *arciferus*, except for the apical spine, the tibiae are simple. The type has not been abraded, as it is in perfect condition; probably on older specimens the clothing would be of the usual muddy-brown. Seen from behind the elytra appear rather strongly trisinate at base; from directly above the trisination is much less pronounced, although quite evident.

### MANDALOTUS VIGILANS sp. nov.

Fig. 79, e.

♂ Dark brown, antennae and legs paler, sometimes almost flavous. Moderately clothed with brownish or brownish-grey scales, sparsely interspersed with setae; under surface and legs more sparsely clothed.

Eyes very large and round. Rostrum short and curved; median carina apparently absent. Antennae rather long and thin. Prothorax distinctly transverse; with six obtuse tubercles, of which two on each side cause it to appear bilobed; with a few granules scattered about. Elytra feebly trilobed at base, shoulders rounded off; third interstice with three tubercles, a fairly large one at base, one about as large just beyond the middle, and a small one between them; fifth also with three tubercles placed slightly posterior to those on the third, seventh and ninth with several feeble tubercles; with rows of rather large punctures, partially obscured by clothing and interrupted by tubercles. Basal segment of abdomen with coarse punctures, and a comparatively narrow median impression. Front coxae apparently touching, middle ones not widely separated; femora very stout; tibiae thin. Length, 2.5–3 mm.

♀ Differs in being considerably wider, eyes smaller, prothorax more transverse, elytral tubercles of altered sizes, basal segment of abdomen larger, more convex, without large punctures or a median depression, and femora thinner.

*Hab.* Victoria: Millgrove in January, Belgrave in January and July, from fallen leaves (F. E. Wilson). Type, I. 15964.

A small species, with conspicuous elytral tubercles, and unusually large eyes; in the male the distance separating these at their nearest point is less than half the diameter of an eye, in the female the distance is slightly more than the diameter of an eye. In the table it is associated with *M. bilobocollis* (from Lord Howe Island), which has very different shoulders. On fresh specimens, in certain lights, some of the scales have a golden gloss.

**MANDALOTUS HYPULUS** sp. nov.

♂ Black, antennae and parts of legs somewhat reddish. Densely clothed with sooty-brown, feebly variegated scales; each femur with a pale ring; with short setae, rather sparsely scattered about; tibiae rather feebly ciliate.

Rostrum, short, stout, and curved; median carina faintly indicated through clothing. Antennae rather long and thin. Prothorax slightly wider than long, sides feebly dilated from near base to beyond the middle; with crowded and small granules, distinct on abrasion, but feebly indicated normally. Elytra trisinate at base, notched behind each shoulder, posthumeral prominence scarcely indicated; alternate interstices feebly elevated, the third with a swelling at base, and a fairly distinct tubercle at summit of apical slope, the fifth with two, one just before and one below summit of apical slope; with rows of large punctures, wider than the interstices, but appearing much smaller through clothing, and many quite concealed. Abdomen with a wide and fairly deep depression on basal segment, continued on to second, but shallower there. Front coxae practically touching, tibiae feebly denticulate. Length, 5 mm.

*Hab.* Tasmania (Aug. Simson). Type (unique), L. 15963.

In addition to the distinct tubercles about the summit of the apical slope, there are other faintly indicated ones posteriorly. The clothing would probably be more variegated on fresher specimens than on the type, as the pale scales on the femora and some of those elsewhere have a slight golden gloss.

**MANDALOTUS FUNEREUS** sp. nov.

♂ Black, claw joints reddish. Densely clothed with sooty-brown, feebly variegated scales, interspersed with stout, depressed setae.

Eyes small. Rostrum stout and strongly curved; median carina invisible. Antennae fairly long and thin. Prothorax slightly transverse, sides strongly and evenly rounded; granules placed transversely. Elytra deeply conjointly areolate at base, slightly notched behind each shoulder, with the posthumeral prominence fairly distinct; third and fifth interstices subtuberculate at and about summit of apical slope, the third also at base; with large punctures, much wider than the interstices, but appearing quite small through the clothing, and a few entirely concealed. Basal segment of abdomen very feebly depressed in middle. Front coxae widely separated, front and hind tibiae rather feebly denticulate on lower surface, the middle pair still more feebly. Length, 7 mm.

*Hab.* Victoria: Alps (T. G. Sloane). Type (unique), L. 15965.

A large species, but with tubercles so feeble that it was only after hesitation it was placed in *F* in the table; regarding the elytra as nontuberculate, it could be associated with *M. transversus*, a wider species, with base of elytra different.



The scales, and the setae placed amongst them, vary from an obscure brown to black, and are entirely without gloss (the type is apparently in perfect condition); on the elytra the stout setae are denser on the suture and on the swellings than elsewhere. On abrasion the prothorax is seen to be traversed by numerous thin, interrupted carinae, rather than granules transversely arranged.

**MANDALOTUS MEDCOXALIS** sp. nov.

Figs. 78, j; 80, l, m.

♂ Black, antennae and legs more or less reddish. Densely clothed with scales varying from greyish to sooty-brown, and interspersed with numerous sloping setae; front tibiae conspicuously ciliated.

Rostrum rather short, middle carina thin and distinct throughout. Antennae moderately long and thin. Prothorax slightly transverse, sides strongly rounded; surface traversed by numerous short, interrupted carinae, or by granules transversely arranged, and traceable before abrasion. Elytra conjointly, rather deeply arcuate at base, but arcuation interrupted on each side by a swelling at the base of the third interstice; a notch behind each shoulder, posthumeral prominence rather conspicuous; with subhumeral swellings on and about summit of apical slope; punctures large and wider than interstices, but appearing much smaller through clothing. Basal segment of abdomen and metasternum jointly shallowly depressed. Front coxae widely separated; middle coxae armed with a thin, blunt tooth, projecting obliquely backwards; front tibiae strongly curved, hind ones with an oblique ridge on lower surface, and between there to apex strongly incurved. Length, 5-6 mm.

*Hab.* New South Wales. Dorrigo (W. Heron and H. J. Carter). Type, l. 15960.

Readily distinguishable by the characters noted in the table. The elytra have a rough appearance, but, except about the base, they could hardly be regarded as tuberculate; regarding them as such, however, in the table the species could be distinguished from all those referred to F by the armed middle coxae. The ridge on the hind tibiae from the sides appears as a small tooth. Of the three males obtained only one has apparently attained its full colouring, the others have the antennae and legs rather pale, with most of the under surface also somewhat reddish.

**MANDALOTUS OXYOMUS** sp. nov.

♂ Black, antennae and tarsi obscurely reddish. Densely clothed with muddy-brown scales, obscurely variegated with small paler and darker spots;

with numerous setae, mostly decumbent; tibiae with rather thin setae on under surface, but not ciliated.

Eyes comparatively small and quite circular. Rostrum short and strongly curved; median carina not traceable. Antennae moderately long and thin. Prothorax rather feebly transverse, sides strongly and evenly rounded; traversed by numerous short, flattened ridges, or transversely placed granules. Elytra conjointly areolate at base, shoulders laterally prominent, a distinct notch between each, and a conspicuous posthumeral tubercle; alternate interstices feebly elevated; with large punctures, appearing small through clothing, or even concealed. Basal segment of abdomen shallowly depressed about base, the depression continued on to metasternum. Middle coxae with a conspicuous ridge or obtuse tooth; front coxae widely separated; front and middle tibiae feebly denticulate, the hind pair with apical half strongly arched, and blunt tipped. Length, 5 mm.

*Hab.* South Australia: Mount Lofty (A. H. Elston). Type (unique), l. 15977.

The middle coxae could scarcely be regarded as armed, still the ridge is very conspicuous from the sides, and from some directions appears almost as a tooth, and to a certain extent approaches that of *M. dentipes*; from that species it is at once distinguished by the front tibiae, the apex of which, on *dentipes*, is conspicuously notched.

#### MANDALOTUS MULTICARINATUS sp. nov.

♂ Black, antennae and parts of legs obscurely reddish. Moderately clothed with muddy-brown scales, with rather sparsely interspersed setae; under surface with thin setae only.

Rostrum rather short and curved; median carina not traceable. Antennae fairly long and thin. Prothorax moderately transverse, sides strongly and almost evenly rounded; disc traversed by numerous thin carinae, in places broken up into transverse granules, and distinct before abrasion. Elytra conjointly areolate at base; interstices not separately convex, and not alternately elevated; punctures comparatively small. Under surface with crowded and small punctures; basal segment of abdomen with a shallow depression, continued on to metasternum. Front coxae moderately separated, all tibiae suddenly dilated at apex. Length, 3 mm.

*Hab.* Victoria: Kulkyn in September (F. E. Wilson). Type (unique), l. 15966.

The sparse and thin clothing of the under surface allows the derm to be seen, as in *M. crowfordi*, with which it could be associated in the 1914 table of

the genus, but from which it differs in having the body parts black, with the antennae and parts of legs obscurely reddish, instead of almost flavous; in *crawfordi*, except for some of the scales, only the eyes are black; that species also has rather dense elytral setae. The elytral punctures are decidedly smaller than is usual in the genus, on abrasion their greatest width is seen to be less than one-third the width of the interstices; on the males of *crawfordi*, after abrasion, they are seen to be fully half the width of the interstices. There is a slight notch behind each shoulder, rendering it laterally prominent.

#### MANDALOTUS STRIATUS sp. nov.

♂ Black, antennae and parts of legs dull reddish. Densely clothed with muddy-brown scales, interspersed with suberect setae.

Eyes smaller and more convex than usual. Rostrum short and curved; median carina not traceable. Prothorax not much wider than long, sides feebly increasing in width from base to apex, and then suddenly narrowed; disc traversed by numerous flattened ridges, or transversely placed granules, traceable before abrasion. Elytra elongate-cordate, base conjointly areolate, shoulders rounded off, without posthumeral prominences, interstices not alternately elevated; with rows of comparatively small punctures, quite concealed before abrasion. Basal segment of abdomen feebly depressed in middle. Front coxae moderately separated; tibiae with apical spur. Length, 2.5 mm.

*Hab.* South Australia: Leigh Creek (Rev. T. Blackburn). Type (unique), I, 15967.

Structurally fairly close to *M. subhumeralis*, but without the posthumeral tubercle of that species, and with thinner legs; in the 1914 table of the genus both could be associated with *M. arcuatus*, which has a larger and more rounded prothorax and comparatively large elytral punctures. Before abrasion the elytra appear to be finely striated and without punctures; even after abrasion the punctures in the striae are seen to be decidedly narrower than the interstices, and these to be densely and minutely punctate. The elytral setae are confined to a single row on each interstice.

#### MANDALOTUS LATEBRICOLA sp. nov.

♂ Black, antennae and legs partly reddish. Densely clothed with muddy-brown or muddy-grey, slightly variegated scales, interspersed with stout setae, on the elytra mostly confined to the alternate interstices.

Rostrum short and strongly curved. Antennae moderately thin. Prothorax moderately transverse, sides strongly rounded; granules transversely arranged or conjoined to form numerous short ridges or carinae. Elytra conjointly but

rather feebly areolate at base, shoulders rounded, posthumeral prominence fairly distinct, sides subparallel to beyond the middle, alternate interstices feebly elevated; with rows of large punctures, appearing very small through clothing, and some of them quite concealed. Basal segment of abdomen slightly depressed in middle. Front coxae moderately separated; tibiae acutely spurred at apex. Length, 2.5-3 mm.

♀ Differs in being slightly wider, abdomen more convex, and legs and antennae somewhat shorter.

*Hab.* Victoria: Ringwood in June, July, and September, Ferntree Gully in April and September, Eltham in September, and Healesville in August (F. E. Wilson). Type, I. 15968.

In the 1914 table this species could be associated with *M. abdominalis* and *M. arcuatus*; in size and general appearance it is much like the former, but the abdomen is evenly clothed in both sexes; from the latter it differs in being wider, elytra different at base, alternate interstices somewhat elevated, and in the tips of the tibiae. In general appearance it is strikingly close to *M. trisinuatus*, but the hind tibiae are not subdentate near base. On specimens in good condition the transverse arrangement of the prothoracic sculpture is quite evident, and after abrasion is seen to consist of numerous fine ridges and conjoined granules, but a small amount of dirt obscures it. On several specimens the funicle and tarsi are conspicuously paler than the adjacent parts. Most of the specimens were taken from tussocks or mosses.

#### MANDALOTUS PUNCTICOLLIS sp. nov.

♂ Blackish; antennae, legs, and parts of under surface more or less reddish. Densely clothed with muddy-brown scales, interspersed with stout setae, on the elytra the setae confined to a single row on each interstice.

Eyes unusually small. Rostrum stout and moderately curved; median carina apparently absent. Antennae rather short. Prothorax moderately transverse; sides subangulate in middle; with dense concealed punctures, and without granules. Elytra cubecordate, conjointly arcuate at base, shoulders rounded off, posthumeral prominence absent, interstices even; with rows of large punctures, normally almost or quite concealed. Abdomen with basal segment gently depressed. Front coxae touching, tibiae spurred at apex. Length, 2-2.5 mm.

♀ Differs in having abdomen gently convex, and with somewhat shorter antennae and legs.

*Hab.* South Australia: Berri. Type, I. 15975.

In the 1914 table this species could be associated with *M. maculatus* and *M. squamibundus*, from both of which it differs in being considerably smaller;

in addition it is distinct from the former by the absence of elytral spots, and its smaller eyes with coarser facets; from the latter it is also distinct by its narrower form and sparser and finer setae; the eyes are also somewhat smaller. On abrasion the pronotum is seen to be densely punctate and without granules.

**MANDALOTUS MACROPS** sp. nov.

Fig. 80, u.

♂ Black; antennae and legs somewhat reddish. Densely clothed with muddy-grey scales, becoming paler on apical slope of elytra, and sparse on under surface; a few suberect setae scattered about.

Eyes unusually large and quite round. Rostrum short and slightly curved; median carina distinct in front. Antennae moderately long and thin. Prothorax moderately transverse, sides strongly rounded, median line distinct; with rounded granules, readily traceable through clothing; ocular lobes unusually prominent. Elytra elongate subeordate, conjointly arcuate at base, shoulders oblique, posthumeral prominence very feeble; with rows of distinct punctures, appearing small through clothing, but probably large. Basal segment of abdomen with a longitudinal depression. Front coxae touching, femora stout, tibiae rather thin and rather feebly spurred. Length, 2.25 mm.

*Hab.* Victoria: Healesville in March (F. E. Wilson). Type (unique), I. 15974.

In the 1914 table this species could be associated with *M. maculatus* and *M. squamibundus*, from which it is distinguished by the larger eyes and more prominent ocular lobes. The eyes are so large that the distance between them at their nearest approach to each other is scarcely half the diameter of an eye. The front of the prosternum is deeply and almost angularly notched, causing the ocular lobes to appear unusually prominent. On the type many of the scales have a slight golden gloss, this becoming quite conspicuous on the apical slope of elytra; it is probable, however, that the gloss is distinct only on fresh specimens. In places the interstices are feebly thickened, causing slight divergences of the adjacent rows of punctures, but they could not fairly be regarded as tuberculate.

**MANDALOTUS CORDIPENNIS** sp. nov.

Black, parts of antennae and of legs reddish. Densely clothed with muddy-brown scales, variegated with pale spots, and interspersed with numerous stout, semi-erect setae.

Rostrum very short and curved; median carina not traceable. Antennae not very long. Prothorax distinctly transverse, sides strongly rounded; with

rather coarse granules, traceable before abrasion. Elytra cordate, across middle almost twice the width of prothorax, shoulders rounded off, without posthumeral tubercles; alternate interstices very feebly elevated, and slightly uneven about summit of apical slope; with rows of large punctures, appearing very small through clothing. Abdomen moderately convex. Front coxae almost touching, tibiae feebly spurred. Length, 2-2.5 mm.

*Hab.* Victoria: Lorne in October, Beaconsfield in April (F. E. Wilson). Type, I. 15971.

A small, compact species, with but feeble external indications of sex; the female is slightly larger, wider (more noticeably in middle of elytra than elsewhere), and the abdomen is more convex, although even in the male it is certainly not flat. The incurvature at the apex of the prosternum and the ocular lobes are feeble, and the claws are smaller than usual. On specimens in perfect condition there are numerous spots on the elytra, some of which are almost square, but on most of the specimens taken by Mr. Wilson the variegation is very feeble. On some specimens the legs and antennae are entirely red, but the funicle, coxae, and tarsi are usually of a brighter red than the adjacent parts, although the scape and club never appear to be quite black; two or three segments of the abdomen are usually obscurely reddish. On some of them the front coxae appear to be in actual contact, but when viewed from behind they may be seen to be slightly separated.

#### MANDALOTUS GYMNOGASTER sp. nov.

♂ Black; antennae and legs more or less reddish. Densely clothed with muddy-brown, variegated with greyish scales, and rather sparsely interspersed with suberect setae; under surface sparsely clothed.

Rostrum moderately short and curved; median carina usually distinct throughout. Antennae thin. Prothorax slightly transverse, sides strongly rounded, median line traceable; with numerous fairly large granules, traceable before abrasion. Elytra feebly trisinate at base, without posthumeral tubercles, alternate interstices feebly elevated; with rows of large punctures, wider than interstices, but appearing much smaller through clothing. Basal segment of abdomen with a rather deep, shining impression, continued on to metasternum. Front coxae almost touching; tibiae rather thin, apex not very acutely spurred. Length, 2.75-3.5 mm.

♀ Differs in being wider, abdomen and metasternum not excavated, and antennae and legs shorter.

*Hab.* Victoria: Lakes Entrance in October (F. E. Wilson). Type, I. 15972.

The cavity on the under surface is somewhat as on *M. foveatus*, but that is a considerably larger species, with front coxae more widely separated. No part

of the antennae is black, or even very dark, but the funicle is usually paler than the other parts; the legs are sometimes entirely reddish, but usually the femora are black, except at their ends; the tibiae are occasionally partly dark; the apical segment of the abdomen is usually reddish. On an occasional specimen there is a fairly distinct pale spot on the basal thickening of the third interstice, and several more about the summit of the apical slope, but on most specimens the variegation is feeble and ill-defined. From directly above the elytra appear to be almost evenly arcuate at base, but from most points of view the thickening of the third interstice causes the base to appear trisinate, more noticeably on the female than on the male.

#### **MANDALOTUS ALPINUS** sp. nov.

♂. Black, antennae, parts of legs and apical segments of abdomen more or less reddish. Densely clothed with muddy-brown, feebly variegated scales, and interspersed with suberect setae, the latter confined to a single row on each interstice of elytra.

Rostrum rather short and curved; median carina traceable throughout. Antennae rather long and thin. Prothorax almost as long as wide, sides strongly rounded; with rather large close-set granules, traceable before abrasion. Elytra feebly trisinate at base, without posthumeral tubercles, alternate interstices feebly elevated; with rows of large punctures, wider than interstices, but appearing much smaller through-clothing. Basal segment of abdomen and metasternum with a conjoint but rather shallow depression. Front coxae touching, tibiae thin and feebly spurred. Length, 4 mm.

*Hab.* Victoria: Alps (Rev. T. Blackburn). Type, I. 15973.

In the 1914 table this species could be associated with *M. coxalis*, from which it differs in having smoother elytra and the prothorax less transversé, with larger but less conspicuous granules; these are feebly transversely arranged on the sides, but not elsewhere. Structurally it is close to the preceding species, but differs in being larger, under surface moderately clothed, and its depression much shallower. On two, of the three, specimens taken by Mr. Blackburn the scales on the head have a slight golden lustre, and even on the elytra a gleaming scale is occasionally evident.

#### **MANDALOTUS POSTCOXALIS** sp. nov.

Fig. 78, k.

♂. Black, funicle and tarsi reddish, rest of antennae darker. Densely clothed with muddy-brown or sooty scales, sometimes slightly variegated, and interspersed with numerous suberect setae.

Rostrum short, stout, and curved: median carina distinct in front, but normally concealed elsewhere. Antennae rather thin. Prothorax moderately transverse, sides strongly rounded; with large granules, distinct before abrasion; median line distinct. Elytra trisinate at base, posthumeral projection prominent; surface uneven or subtuberculate, especially about summit of apical slope; with rows of large punctures, appearing much smaller through clothing. Basal segment of abdomen with a wide, shallow depression, continued on to metasternum. Front coxae widely separated, hind ones with a blunt tubercle; apical half of hind tibiae arentely thinned on inner side. Length, 4-5 mm.

♀ Differs in having prothorax smaller and elytra wider, under parts not depressed, hind coxae unarmed, and hind tibiae less thinned inwardly.

*Hab.* Victoria: Eltham in April, August and September, Belgrave in January, Melbourne in July, Evelyn in May, Ringwood in July and September, Ferntree Gully in January (F. E. Wilson), Gippsland (J. E. Dixon). Type, I. 15961.

The armature of the hind coxae is not distinct from some directions, but on looking at a specimen along the middle the projections are clearly visible. The distance between the front coxae is about the width of a coxa. On some specimens parts of the under surface and of the legs, in addition to the tarsi, are obscurely reddish. On many the clothing of the upper surface is uniformly sooty or almost so, occasionally it is fawn-coloured; but on one of the Gippsland males there is a distinct whitish spot on the thickened base of the third interstice on each elytron, and five fairly distinct pale spots on the pronotum.

#### **MANDALOTUS HOPLOCNEMUS** sp. nov.

Figs. 78, 1; 80, r.

♂ Black, antennae and tarsi more or less reddish. Densely clothed with muddy-brown scales, interspersed with suberect setae; under surface sparsely clothed.

Rostrum stout and strongly curved; median carina not traceable. Antennae rather long and thin. Prothorax as long as wide, sides strongly rounded; with close-set granules, distinct before abrasion. Elytra feebly trisinate at base, posthumeral prominence very feeble, alternate interstices feebly elevated; with rows of large punctures, appearing much smaller through clothing. Basal segment of abdomen feebly depressed in middle towards base. Front coxae very widely separated, the middle ones much closer together; front tibiae with a distinct tooth on inner side at basal third. Length, 3 mm.

*Hab.* South Australia: Mount Lofty Ranges, in moss (N. B. Tindale). Type, I. 15970.



The armature of the front tibiae is nearer the base than in *M. avenaceus*, with which the species could be associated in the 1914 table, and the front coxae are more than twice as widely separated as the middle ones, an unique feature in the subfamily. The funicle is decidedly paler than the rest of the antennae. A smaller (2.5 mm.) specimen is evidently immature, as it is (except for the clothing) entirely flavous, the tooth on its front tibiae is present, but smaller than on the type, and one of its deciduous mandibular processes is present.

#### **MANDALOTUS IMPONDEROSUS sp. nov.**

Pale castaneous. Moderately clothed with muddy-grey slightly variegated scales, interspersed with suberect setae; under surface sparsely clothed.

Eyes very large. Rostrum short and curved, median carina not traceable. Prothorax moderately transverse, sides strongly rounded; granules normally inconspicuous. Elytra conjointly arcuate at base, without posthumeral prominences, alternate interstices not elevated; with rows of large punctures, appearing much smaller through clothing. Basal segment of abdomen shining and slightly convex in middle. Front coxae almost touching, tibiae feebly spurred. Length, 1.5 mm.

*Hab.* Queensland: Mount Tambourine, from fallen leaves, in January (A. M. Lea). Type (unique), I. 15976.

The type is probably a female, as I cannot find any distinctly masculine features on it, and the abdomen is slightly convex. It was described, however, as its minute size should prevent its being confounded with any previously named species. It is decidedly smaller even than *M. microscopicus*, wider in proportion, and with much larger eyes; the distance between these at their nearest approach is less than the diameter of one of them. Although its derm is entirely pale, it is by no means certain that the type is immature, as its eyes are black, and the deciduous mandibular processes have been shed. Only a slight part of the pronotum was abraded, but this indicates that the granules are less evident than on most species of the genus.

#### **MANDALOTUS COLLARIS sp. nov.**

♂ Black, some parts obscurely reddish, funicle and tarsi paler. Densely clothed with muddy-brown scales, somewhat variegated in parts; with stout and not very dense setae scattered about, and becoming longer and more numerous on legs.

Rostrum short and stout, apparently without median carina, with an elevated subtriangular space commencing at the inter-ocular fovea and dilated to insertion of antennae. Antennae rather long and thin; scape somewhat curved; second

joint of funicle longer than first. Prothorax moderately transverse, sides and disc irregular. Elytra wider than prothorax, surface very uneven, shoulders produced; with very irregular rows of not very large punctures. Front coxae widely separated; femora stout; tibiae rather long. Length, 5-6 mm.

♀ Differs in being somewhat wider, two basal segments of abdomen gently convex in middle (instead of flat), and legs somewhat shorter.

*Hab.* Lord Howe Island (A. M. Lea and wife). Type, I. 5802.

In the 1914 table of the genus this species could be associated with *M. irrasus* and *M. ferrugineus*; but the sides of its prothorax and shoulders readily distinguish it from all previously described species. On some specimens the paler scales are but little in evidence, but on others they are very distinct and stramineous, with a faint golden gloss; on several the paler scales are conspicuous on the middle of rostrum from apex to base, and are continued on to head, where they form a conspicuously bilobed basal patch, on the prothorax they form fourteen small spots (four at the apex, four in the middle, two on each side, and two at the base, and four at the base of elytra. Each side of the prothorax is irregularly bilobed, the posterior lobe being usually feebly semi-double; between it and the base the side is strongly incurved to allow room for the projecting shoulder, the surface is irregularly elevated, rather than distinctly granulate or subtuberculate, and the median line is shallowly impressed. The elytra are supplied with numerous rather large, obtuse tubercles, of which there are usually four on the third interstice, three on the fifth, and four or five on the seventh; the humeral projection is oblique and usually semi-double; the suture is thickened at the summit of the apical slope; the rows of punctures are all deflected by the tubercles. Seven specimens were obtained from fallen leaves.

### **MANDALOTUS BILOBICOLLIS** sp. nov.

Fig. 79, f.

♂ Blackish-brown, some parts obscurely reddish; funicle and tarsi paler. Densely clothed with muddy-brown scales, interspersed with stout setae.

Rostrum short and stout. Antennae long and thin. Prothorax moderately transverse, sides conspicuously bilobed. Elytra somewhat as in preceding species. Front coxae touching. Length, 4.25 mm.

*Hab.* Lord Howe Island (A. M. Lea and wife). Type, I. 5804.

Strikingly close in general appearance to the preceding species, but with front coxae touching, instead of widely separated; the intercoxal process of the mesosternum is somewhat rounded, and about as long as wide; on the preceding species it is fully twice as wide as long. The prothorax is somewhat flatter than

on *M. collaris*, with the subtubercular elevations less pronounced, and sides conspicuously bilobed, the posterior lobe is more acute than the other, and not semi-double, between it and the base the side is more largely scooped out than on *collaris*, so that the projecting shoulder has more room; the elytra are more narrowed posteriorly, the tubercular elevations are more obtuse, and the rows of punctures are less conspicuously deflected by them. The rostrum at a glance is much as on *collaris*, but the elevated inter-antennary space is parallel-sided instead of triangular, and the apical plate is larger; the antennae are slightly thinner, but otherwise much the same. Two specimens were obtained from fallen leaves, and there is another, from Mount Ledgbird, in the Australian Museum.

### MANDALOTUS SQUAMOSUS sp. nov.

♂ Blackish-brown, some parts obscurely reddish. Densely clothed with light brown or slaty-grey scales, on the under surface and appendages mixed with fine setae.

Eyes small, each encircled by a narrow but rather deep impression. Rostrum stout, dilated to near apex, transversely impressed at base, feebly bicarinate on upper surface. Antennae long but not very thin, second joint of funicle much longer than first. Prothorax almost as long as wide, sides moderately rounded, sculpture more or less concealed. Elytra wide, shoulders feebly produced and oblique; with semi-double rows of large, partially concealed punctures. Legs stout; front coxae slightly separated. Length 5.5–6.5 mm.

♀ Differs in being wider, shoulders less prominent, two basal segments of abdomen convex in middle instead of flat, and legs somewhat shorter.

*Hab.* Lord Howe Island (A. M. Lea and wife). Type, I. 5803.

The front coxae, although close together, are not touching, consequently in the 1914 table of the genus the species could be associated with *M. spurcus*; but it is in fact very distinct from all previously described species of the genus. The ocular lobes are feeble but quite distinct from below. The claw-joints and the funicle are redder than the other parts, but are not brightly castaneous as on most species. The scales are of almost even colour throughout, but vary in shade amongst the individuals; on the prothorax there are no setae, and on the elytra but few, and those confined to the apical slope. The flanks of the prothorax are covered with dense and rather large punctures quite distinct before abrasion, but the disc through the clothing appears covered with very feeble tubercles, on abrasion, however, many large punctures are in evidence; the median line is rather feeble. The elytral punctures before abrasion appear to be narrower than the interstices, but after abrasion are seen to be wider; the interstices are not separately convex, except on the apical slope, where the alternate ones are feebly elevated above their fellows; the sides are rather suddenly narrowed

behind the shoulders on the male, but less conspicuously so on the female, and the shoulder of the male from below appears subtuberculate. Three specimens were obtained, one from the sea-beach at night.

### MANDALOTUS HOWENSIS sp. nov.

♂ Reddish-brown, some parts (including the antennae and tarsi) paler. Densely clothed with stramineous or light brown scales, obscurely mottled with paler and darker spots and patches; with stout, depressed setae on upper surface, and longer and more numerous ones on under surface and legs.

Rostrum short and stout, median carina not traceable through clothing. Scape stout; first joint of funicle slightly longer and thicker than second, the others subglobular, but seventh distinctly transverse. Prothorax not much wider than long, sides and base rather strongly rounded. Elytra subovate, base arcuate, shoulders rather strongly rounded and widest at basal fourth; with regular rows of rather large punctures, appearing very small before abrasion; interstices scarcely separately convex, and not alternately elevated. Legs rather stout, front coxae almost touching. Length, 4.75-5.25 mm.

♀ Differs in being somewhat wider, two basal segments of abdomen slightly convex (instead of quite flat in middle) and legs somewhat shorter.

*Hab.* Lord Howe Island (A. M. Lea and wife). Type, I. 5828.

In some respects close to *M. ammophilus*, but with clothing more variegated and setae less conspicuous, rostrum not suddenly elevated above head at base, although gently separately convex (as viewed from the side), and scape somewhat thinner. In colour of clothing it approaches *M. crassicornis*, but that species has the scape almost twice as stout, and with a distinct median line on prothorax, of which, (at any rate before abrasion) there is not a trace on the present species; there are also many other differences; *M. herbivorus* has also the scape stouter, and different prothoracic and rostral sculpture. The scape is certainly of considerable thickness, but is less so than any of the species standing under *H. n.* in the 1914 table of the genus. The general appearance of the prothorax and elytra is that of some of the more rusty-looking specimens of *M. sterilis*, with which, however, it has scarcely anything else in common. On the elytra the darker spots are fairly numerous and distinct; on two specimens there is a conspicuous dark patch on each side of the prothorax about the base, and rendered more conspicuous by a dark patch on each side of it; on these two specimens also the abdominal scales are mostly dark rusty-brown, becoming paler at the sides. On the elytra the setae form a more or less regular row on each interstice. On abrasion the prothorax is seen to be closely covered with small punctures, and with many of larger size; granules are absent. Four specimens were obtained, including two from fallen leaves.

**MANDALOTUS MICROPS** sp. nov.

♂ Dark brown (sometimes almost black), appendages and tip of abdomen reddish. With dense muddy-brown clothing, interspersed with stiff, recurved, yellowish setae; under surface much more sparsely clothed, and in places almost, or quite, glabrous.

Eyes very small, each enclosed by a narrow, deep impression, opening in front into the scroto. Rostrum short, with an obscure median line; apical plate not triangular. Scape stout, moderately curved; first joint of funicle rather stout, as long as second and third combined. Prothorax almost as long as wide, sides obliquely increasing in width from base to apical third, and then oblique to apex; with four very obtuse elevations across widest part, and feeble granules (concealed before abrasion) elsewhere. Elytra moderately long and subovate, base trisinnate, widest slightly beyond the middle; with rows of large punctures, almost or quite concealed before abrasion; interstices feebly and almost regularly elevated in places. Abdomen with a basal row of large punctures. Front coxae touching; femora rather stout; tibiae thin; claw-joint long and thin. Length, 2-2 $\frac{1}{4}$  mm.

♀ Differs in having the prothorax more transverse, elytra larger, abdomen larger and more convex, and legs somewhat shorter.

*Hab.* Lord Howe Island (A. M. Lea and wife). Type, I. 5805.

The slight inequalities of the elytra could hardly be regarded as tubercles, but treating them as such the species, in the 1914 table of the genus, could be associated with *M. campyloermis*, which is a much larger and otherwise very different species. Some specimens appear to have no part of the derm black, and these, regarding the elytra as nontuberculate, could be associated with *M. pallidus* (a much larger and otherwise different species); the others could be associated with *O II*, all small species, but all very different from the present one. Some specimens have the derm almost entirely pale castaneous, the under surface and appendages conspicuously so, on account of their sparser clothing. The general appearance of specimens is frequently altered by an incrustation of mud, but on clean ones, under a lens, the upper surface appears to be densely squamose, under a compound power, however, it is seen to be densely covered with fine setae, with considerably stouter ones scattered about; under a compound power also the abdomen is seen to be densely covered with small punctures and fine golden setae, but under a lens it appears shagreened, and the setae have an appearance as of short pieces of fine, spirally twisted silk. The rostrum has its basal two-thirds densely clothed, with the median carina of other species replaced by a narrow impressed line. Fifteen specimens were obtained from fallen leaves.

**MANDALOTUS NODIPENNIS** sp. nov.

♀ Dark reddish-brown, appendages and tip of abdomen paler. With dense muddy-brown, variegated with ashen, clothing; and with a few stout setae scattered about.

Head and its appendages and the legs much as on preceding species. Prothorax rather strongly transverse, sides feebly dilated in width from base to near apex; surface somewhat uneven, but derm concealed by clothing. Elytra subovate, base trisinate, sides rather strongly rounded; punctures normally concealed; interstices with regular series of small nodes. Length, 2½ mm.

*Hab.* Lord Howe Island (A. M. Lea and wife). Type, I. 5667.

A single specimen was obtained, and for some time was mixed with members of the preceding species, from which, however, it differs in having the prothorax more transverse, with the sides more rounded, the elytra shorter, with numerous small but distinct nodes, a few of which have stout setae (differently coloured from those of the preceding), but the majority of which have not; the scape is stouter and the two basal joints of funicle are thinner and longer (the others are missing). As its abdomen is distinctly convex the type appears to be a female, but as the species is certainly different from the preceding one, and is an island form, extremely unlikely to occur on the mainland, it has been named. On the type the clothing, which has nowhere been abraded, has a somewhat spotted appearance, owing to that on the elevated parts being ashen; as on the preceding species, it consists of fine setae, but with a squamose appearance under a lens, the stouter setae are sparse, even on the legs.

**MANDALOTUS NORFOLCENSIS** sp. nov.

♂ Blackish; antennae (club infuscated), legs, and tip of abdomen reddish. With dense, muddy-brown clothing, interspersed with numerous stout setae, thinner but not longer on legs than on elytra.

Rostrum short, median carina not traceable. Scape moderately long and rather thin, distinctly curved; first joint of funicle as long as three following combined. Prothorax slightly transverse, sides obliquely dilated from base to apical third; surface uneven. Elytra distinctly wider than prothorax, surface very uneven. Front coxae touching; femora rather stout; tibiae rather long and thin. Length, 2.25-2.5 mm.

*Hab.* Norfolk Island (A. M. Lea). Type, I. 5806.

This was the only species of the genus I obtained on Norfolk Island, although they were keenly searched for, and much sieving was done. Its nearest allies are *M. microps* and *M. nodipennis*, from Lord Howe Island, but it differs from

them in its rougher sculpture, and differently setose elytra; the claw-joint is also shorter. In the 1914 table of the genus the species could be associated with *M. campylocnemis*, which is a very much larger and otherwise different species. The elytral setae are confined to the elevated parts, and are more conspicuous on the apical half than on the basal; on the under surface many of the scales have a metallic-green gloss. The eyes are small but distinctly larger than on *microps*; on one specimen the base of the rostrum is conspicuously impressed at its junction with head, and the inter-ocular fovea appears narrow and deep, and continued on to base of rostrum, but on the other the inter-ocular fovea is not traceable through the clothing. The prothorax has numerous small granules, and four of larger size across the middle, with numerous punctures, but all more or less concealed by the clothing. Seen from in front the base of the elytra appears to be arcuate, from behind rather strongly trisinate; there are numerous subtubercular elevations, but these appear to be in oblique rather than longitudinal series, and the punctures are large, but both punctures and elevations are greatly obscured by the clothing. Two specimens were obtained from fallen leaves.